

TEACHING READING

TO SLOW-LEARNING CHILDREN



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Introduction

TEACHERS will find many books and articles written on the problems of teaching reading. No other educational skill has received so much emphasis, or has been the subject of such a great variety of investigations. There is, however, a scarcity of books and information dealing directly with the reading problems of children who are retarded mentally. Yet, in every classroom there is a little group of "slow-learners," children who do not have the capacity to keep up with their classmates, and whose problems must be met in some way by their teachers.

The position of a mentally retarded child in the early grades is especially unfortunate. Chronologically six years of age, but with the mental understanding of a four- or five-year-old child, such children enter first grade and are exposed to reading activities with their fellow six-year-olds. Their normal and superior classmates usually react favorably to these experiences and learn to read. The mentally retarded children, however, usually lack the understandings involved in reading, and cannot make the fine discriminations and co-ordinations required by this exacting skill. These children become accustomed to failure before they have a chance to succeed. A year or two later after they have matured sufficiently for reading,

the primer stories and books have lost their zest through frequent and painful repetition, and the children become resistant to further efforts to teach them. The "remedial reading teacher" who now comes to diagnose their difficulties often discovers emotional and behavior difficulties as well as inability to read. By this time the children are often social misfits and show evidences of personality maladjustments related to long-continued failure.

Instead of waiting until children have actually failed to learn to read, educators are now looking for early indications of difficulty and are changing emphasis from corrective to preventive work in reading. Educators are also attempting to recognize and adapt instruction to individual differences to a greater extent than ever before. Emphasis is now being placed on developing reading readiness before exposing children to the actual reading process. Objectives and goals are being defined more clearly than before. Subject matter and skills are now no longer regarded as primary objectives of education, but rather as the tools and means by which children react successfully and happily in their social environment.

Dr. Kirk's book will fill a definite need for teachers who wish to help their slow-learning pupils. Here the teacher will find many suggestions which are practical and can be used in the classroom. She will find discussion of such practical questions as the following: Should mentally retarded children be taught to read? If so, what level of reading achievement can be expected from them? When is a mentally retarded pupil "ready" for reading? Should special methods or procedures be used with these children or do such children respond to the

usual primary-grade procedures? What are retarded children like, physically, emotionally, mentally? Should they be segregated, or may they be taught in regular classrooms? Are their interests similar or different from those of children who have normal mental capacity? How may reading become a joyful experience for such children? These and many other problems are discussed in Dr. Kirk's book, with the common sense that comes from wide experience with mentally retarded children. It is a distinct pleasure to introduce to teachers this very helpful and practical book.

MARION MONROE

Preface

THE purpose of this book is to present to teachers and administrators the problems and techniques of helping the slow-learning child acquire the skill of reading. The teaching of the mentally normal child is amply covered by other authors, but little or no concrete help is available for the teacher struggling with the reading problems of dull and mentally retarded children. Although reading in general has occupied research workers far more than any other school subject, there is a paucity of research in this field for the dull child. Even the *Twenty-Fourth* and *Thirty-Sixth Yearbooks of the National Society for the Study of Education*, which were devoted entirely to reading, ignored the subject completely.

Of the skills acquired in school, reading is the most essential for developing and socializing the child. It aids him in protecting himself, in acquiring information, in securing enjoyment, and thereby in becoming a more contented and useful member of society. The task of socializing the backward child is the most significant responsibility of his teacher. It is therefore justifiable to stress the teaching of reading, that the task may be performed as effectively as possible.

The writer has attempted to present techniques for helping the retarded child develop his maximum reading ability.

Many of these techniques are methods which are used with average children. Some are devices specially developed for the mentally retarded child. All of them have been evaluated and adapted to the learning ability of the backward child, whether he is found in the regular grades or in special classes.

For the nucleus of many of the ideas and opinions expressed in the book the writer is indebted to various workers in the field of reading. He is especially indebted to Dr. Marion Monroe for the initial inspiration in the field of reading, and to Dr. Thorleif G. Hegge, with whom he worked for a number of years. He also owes much to his experience with many retarded children from whom he learned so much, as well as to numerous teachers and students of retarded children. The writer also wishes to express his indebtedness to authors and publishers who have so kindly granted permission to quote from their works.

And finally, the writer greatly appreciates the intangible as well as the tangible assistance of his wife, Winifred Day Kirk, who helped in formulating opinions, in making evaluations, and in preparing the manuscript.

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CHAPTER I

The Slow-Learning Child

THE MEANING OF MENTAL RETARDATION

THE SLOW-LEARNING child is one of low intelligence, who is incapable of keeping up with his classmates in the regular public schools, and who therefore requires a modified curriculum for his maximum growth and development. The term mental retardation as used in this book includes minor mental defects as well as extreme forms of "feeble-mindedness" or "mental deficiency." Any child who has an IQ below 80 and who is not progressing in school at the same rate as other children may be considered mentally retarded.

There are of course many degrees of mental retardation. For the purpose of education, supervision, and care the following classification is usually employed:

1. *An idiot* is a mentally retarded child with an IQ below 25 who is incapable of learning even the rudiments of school work. He is usually incapable of taking care of his personal needs and requires supervision and external support for his survival. Any attempt at academic training for an idiot is considered a waste of time.

2. *An imbecile* is one whose IQ falls between 25 and 50. He can care for himself personally and do odd jobs, but requires supervision and total or partial support for existence. Educationally an imbecile rarely reaches beyond the first grade.

3. *A high-grade mental defective*, usually called a moron, is

one whose IQ ranges roughly between 50 and 70. Under favorable circumstances and with adequate training, the high-grade mental defective can become self-supporting. In many cases he will require little or no supervision. Educationally he may attain a level between the first and fourth grades.

4. *The borderline defective* is one whose IQ is roughly between 70 and 80. This type is usually capable of self-support, and frequently can compete with other members of our society. Educationally he is able to reach third to eighth grade in school.

INCIDENCE OF MENTAL RETARDATION

According to Martens¹ two to five per cent of the juvenile population can be considered retarded mentally. The majority of these two to five per cent fall in the high-grade mental defective and the borderline defective groups. Pintner² has summarized a number of studies conducted in the United States and in England and has attempted to answer the question of frequency of mental deficiency. These studies list the frequencies of mental deficiency from as low as one-half per cent to as high as six per cent of the population. Such great differences in the results of investigators are probably due to the different criteria which have been used by them. Some investigators were concerned only with the extreme forms of mental deficiency while others included the high-grade and borderline types. The majority agree, however, that two to three per cent of the school population are mentally retarded. And if the borderline defectives up to 80 IQ are included the number may go as high as five per cent.

¹ ELISE E. MARTENS, *A Guide to Curriculum Adjustment for Mentally Retarded Children* (Department of the Interior, Bulletin No. 11, 1936), p. 7.

² RUDOLPH PINTNER, *Intelligence Testing, Methods, and Results*, New edition, p. 337.

A well-known study of the distribution of intelligence is that by Terman¹ who classifies the IQ's of 900 children. His data are compared in Table I with a distribution of IQ's on the new Stanford-Binet as given by Merrill.² Terman's 1916 data show that five per cent of the school population have IQ's of 78 and below. The new data show five per cent of the school population with IQ's of 77 and below.

TABLE I. THE DISTRIBUTION OF INTELLIGENCE QUOTIENTS ON THE OLD AND NEW STANFORD-BINET SCALES

Percentile	IQ's on Old Binet	IQ's on New Binet
33.3	95	96
25	92	93
20	91	90
15	88	87
10	85	83
5	78	77
3	76	73
2	73	70
1	70	65
No. of Cases.....	905	2904

According to the studies which have been made on frequencies of mental retardation in schools, two to five of every 100 children in an average American community are mentally retarded and require a modified curriculum for their maximum growth and development. Any school system with 500 to 1000 children or more should provide for a special class since there are a sufficient number of children who will require a special curriculum adapted to their mental level. For smaller school systems a modified special class or some provision for individualized attention in the regular grades may be furnished for such children.

¹ LEWIS M. TERMAN, *The Measurement of Intelligence*, p. 78.

² MAUD A. MERRILL, "The Significance of IQ's on the Revised Stanford-Binet Scales," *Journal of Educational Psychology* (December, 1938), pp. 641-651.

THE CHARACTERISTICS OF MENTALLY RETARDED CHILDREN

Educating mentally retarded children requires keen insight into their characteristics. In some respects there are marked differences between the average child and the mentally retarded child; in other respects there is little difference between them. Through study and understanding of the characteristics of these children we can capitalize on assets and minimize defects. In the following section an attempt will be made to give some similarities and differences between the normal and the mentally retarded child.

Physical Development

Some studies have shown that mentally retarded children are only slightly inferior to the average child in physical development.

In a study of the height and weight of ten thousand children in nineteen institutions in the United States Goddard¹ found that idiots were shorter and weighed less than imbeciles; that imbeciles were correspondingly inferior to morons; and that morons were inferior to normals. These conclusions were based on the average heights and weights of normal and mentally retarded children and signify only that *on the average* slight differences are found corresponding to degrees of mental retardation.

A more recent study by Dayton² on 31,939 educationally

¹ H. H. GODDARD, "The Height and Weight of Feeble-Minded Children in American Institutions," *Journal of Nervous and Mental Diseases* (June, 1912), pp. 211-235.

² N. A. DAYTON, "Height, Weight, and Intelligence Relationships in 31,939 Retarded Children Examined by Fifteen Massachusetts Travelling School Clinics, 1921-1932," *Proceedings of the American Association on Mental Deficiency* (May, 1937), pp. 84-100.

retarded children shows results similar to those of Goddard. The tallest children had an average IQ of 77.2 while the shortest children showed an average of 65.26.

Although surveys made on the relationship of height and weight to intelligence show that normal children are slightly superior physically to subnormal children, it should be emphasized that the difference is not very great. Actually there is overlapping in the heights and weights of normals and subnormals. Many mentally retarded children are average in both height and weight but the median for the mentally retarded is slightly below that for the average child.

Some people have believed that the brain of the mentally retarded child is smaller than that of the normal child, but research workers have been unable to establish such a fact. Binet¹ discarded the measurements of the cranium as an index of mental deficiency, and Hollingworth² states that diagnosis of mental deficiency cannot be made on the basis of cranial measurement.

Another physical difference between normal and mentally retarded children is in the mortality rate. Miner tabulated the rate of mortality in institutions for the feeble-minded in the United States. Table 2 shows this rate as compared with that of normals.

Dayton³ also studied the mortality of 8976 institutionalized mentally deficient children over a period of fourteen years. He concluded that the rate of mortality among idiots as compared with the general population is five times as high; imbeciles twice; and morons only slightly higher than that of nor-

¹ A. BINET and TH. SIMON, "Recherches de Pédagogie Scientifique," *L'Année Psychologique* (1905), pp. 233-274.

² LETA S. HOLLINGWORTH, *The Psychology of Subnormal Children*, p. 136.

³ N. A. DAYTON, "Mortality in the Mentally Deficient Over a 14 Year Period," *Proceedings of the American Association for the Study of the Feeble-minded* (April, 1931), pp. 127-212.

TABLE 2. MORTALITY OF INSTITUTIONAL DEFICIENTS IN THE UNITED STATES COMPARED WITH THE GENERAL POPULATION (MINER)¹

Ages	General Population	Institutional Feeble-minded
5.....	1000	1000
10.....	983	795
15.....	972	696
20.....	956	606
25.....	934	503
30.....	903	428
35.....	872	349
40.....	835	290

mals. Martz,² in his study of 1273 patients in an Ohio institution over a period of twenty-five years, found that the death rate was twice that for the state as a whole.

However, the rate of mortality among mentally retarded children in special classes is assumed to be less than the rate among those in institutions which have many lower grade types. Public school systems usually exclude idiots and imbeciles from classes. The clinical types of mentally deficient children, the cretins, mongols, hydrocephalics, microcephalics, and others, are usually committed to institutions for the feeble-minded. The rate of mortality among this group is higher than among the non-clinical type group. Consequently the rate of mortality, which is greater among idiots and imbeciles than among the higher grades of mentally defectives, is greater in institutions than in the special classes of the public schools which admit only the higher grades of mental retardates.

In view of the importance of physical health and development for the public school child, it is unfortunate that comparable studies have not been made on the height, weight, size of brain, and mortality of mentally retarded children in the pub-

¹ J. B. MINER, *Deficiency and Delinquency*, p. 31. By permission of Warwick and York, publishers.

² E. W. MARTZ, "Mortality Among the Mentally Deficient," *The Training School Bulletin* (February, 1934), pp. 185-197.

lic schools. It is probable, however, that mentally retarded children are on the average slightly inferior physically to normal children. It should be again remembered, however, that there is a tremendous overlapping in health in the normals and subnormals and that we are unable to diagnose mental retardation from physical symptoms alone.

Motor Development

In motor development as in height, weight, and mortality, studies show a slight inferiority on the part of the mentally retarded child. In this respect also there is a tremendous overlapping of the normal and the subnormal.

According to studies by Wallin¹ the normal child learns to walk at 1.13 years; the borderline defective learns to walk at 1.53 years; the high-grade defective at 1.82 years; and the imbecile and idiot between two and three years of age. Murphy² compares normal and mentally deficient children in age of walking and confirms Wallin's earlier findings. He concludes that the average age of walking for mentally deficient children is 26.6 months, while for normal children the average age of walking is 14.99 months. He also finds that the imbeciles and idiots are significantly slower in walking than the morons or normals. Hollingworth³ concludes that mentally deficient children approach nearer to normals in motor ability than they do in mental ability. The overlapping is great and many mentally retarded children exceed some normals in motor ability. Hollingworth again states that a diagnosis on the basis of motor ability is not warranted from the studies.

¹ J. E. WALLIN, *Clinical and Abnormal Psychology*, p. 66.

² MILES MURPHY, "The Relation Between Intelligence and Age of Walking in Normal and Feeble-minded Children," *The Psychological Clinic* (September, 1933), pp. 167-197.

³ HOLLINGWORTH, *op. cit.*, p. 138.

The Speech of the Mentally Deficient

According to Ingram,¹ approximately twelve per cent of mentally retarded children have speech defects. This is a much greater frequency than is found among normal children. West, Kennedy, and Carr² state that in cases of amentia such defects as the following are found: "The grammar lacks refinement of tense, number, person, mode, case, and often even of gender. The thoughts expressed are consistent with *things* rather than with *ideas*. The pronunciation is confused, though the articulation may be accurate. The vocabulary is small, apparently not so much because of the lack of articulatory skills as the failure to recognize the need of a variety of meanings — the speech garment of the ament is fully adequate for the ideas he has to clothe. The onset of speech is delayed."

The mentally deficient child is found to be markedly retarded in speech since speech is closely related to the intellectual functions. It is apparently a part of the whole language function and needs to be trained as a part of the reading readiness program which will be discussed later.

Mental Growth

It was once believed that mentally retarded children develop mentally as do normal children but stop earlier. Experimentation by Kuhlmann,³ however, shows that the mentally deficient child is retarded from the beginning and, if anything, gradually becomes more retarded. The IQ's of the idiots drop

¹ CHRISTINE P. INGRAM, *Education of the Slow-Learning Child*, p. 21.

² ROBERT WEST, LOU KENNEDY, and ANNA CARR, *The Rehabilitation of Speech*, p. 138. By permission of Harper and Brothers, publishers.

³ F. KUHLMANN, "The Results of Repeated Mental Re-Examination of Six Hundred and Thirty-nine Feeble-minded Over a Period of Ten Years," *Journal of Applied Psychology* (September, 1921), pp. 195-224.

more than those of the morons. Moore¹ in his study of idiots found that most of them show a decrease in IQ level. Hoakley,² working with higher-grade mental defectives, found that a larger percentage of children showed a five point IQ decrease than showed a five point increase. There were 7.5 per cent more children in the former group than in the latter, thus confirming the above findings.

Learning Ability

All studies and observations show that the mentally deficient learn more slowly and retain less than normal children. There is no question on this point. A related question is: How do the mentally deficient compare in learning ability with normal children of the same mental age? That is, will a child of twelve whose mental age is six learn as rapidly as an average child of six years?

Woodrow³ compared normal and feeble-minded children of the same mental age on learning tasks covering a period of thirteen days. His results showed that the two groups were of equal learning ability.

Woodrow's experiment showed that over a short period of time the learning ability of mentally retarded children was equal to that of normal children of the same mental age. Surveys of the learning ability of subnormal children over a longer period of time, however, show that their rate of learning is slower because their rate of mental growth is slower. A six-

¹ L. MOORE, "Mental Growth of Low-Grade Feebleminded," *Training School Bulletin* (June, 1929-1930), pp. 85-88.

² Z. P. HOAKLEY, "The Variability of Intelligence Quotients," *Proceedings of the American Association for the Study of the Feebleminded* (May, 1932), pp. 119-146.

³ H. WOODROW, "Practice and Transference in Normal and Feeble-Minded Children," *Journal of Educational Psychology* (February and March, 1917), pp. 86-96 and pp. 151-165.

year-old child with a six-year mental age (IQ 100) will grow one year mentally in one year's time. A twelve-year-old subnormal child with a six-year mental age (IQ 50) will grow mentally only one-half a year. Learning will be correspondingly retarded.

Play Activities of the Mentally Retarded

Very little research has been done on the play or recreational interests and abilities of mentally retarded children. Observations, however, indicate that their interests and abilities are similar to normal children of the same mental rather than chronological ages. Schlotter and Svendson¹ carried on an extensive project in recreation at the Lincoln State School and Colony, Illinois. They found:

1. That the development of interests in mentally retarded children was similar to those of normals.
2. That mental age seemed to be a more important factor in determining interests and abilities than chronological age.
3. That the older children with mental ages of nine and above could learn, play, and enjoy complex games such as basketball or folk dancing.
4. That games were successful if the verbal directions were minimized and demonstration emphasized.

Occupational Abilities

Channing² conducted an extensive investigation on the employment of graduates of special classes in Detroit, Rochester, Newark, Cincinnati, Los Angeles, San Francisco, Oakland, and two Illinois state institutions for the men-

¹ BERTHA SCHLOTTER and MARGARET SVENDSON, *An Experiment in Recreation with the Mentally Retarded*, p. 75.

² ALICE CHANNING, *Employment of Mentally Deficient Boys and Girls* (United States Department of Labor, Children's Bureau Publication M, 210, 1932), p. 107.

tally deficient. The study included the work histories of 949 boys and girls who had been employed. Most of these were between 50 and 70 IQ. The study covered the records of those who left school between 1917 and 1920. A period of three to seven years had elapsed after their leaving school before the follow-up study was made. The significant results of the study showed that:

1. Seventy-one per cent of the boys and forty-three per cent of the girls were gainfully employed. Many of the girls had married, apparently decreasing the percentage of employment.
2. The mentally deficient had been employed about one-fifth of the time after leaving school. This record is not quite as good as that made by unselected children of the same age.
3. The occupations found by mentally retarded boys and girls were mostly of the unskilled and semi-skilled types which required little academic or vocational training. The jobs found by these children were mostly in the manufacturing and mechanical industries. The boys were employed as factory operatives and laborers, while the girls found employment in factories or in personal and domestic service.
4. The wages for boys (1923-24) ranged from \$19 to \$27 a week. About fourteen per cent of the boys earned \$32 or more a week. The wages for the girls ranged from \$12.50 to \$16.50 a week.

Personality of the Mentally Retarded

If personality is considered to be the result of the interaction of the social environment and the organism, it is inevitable that the personality of the mentally retarded must reflect the thwartings and abuse from normal individuals in social reactions which differ from those of normal children. Glueck¹

¹ ELEANOR T. GLUECK, "Mental Retardation and Juvenile Delinquency," *Mental Hygiene* (October, 1935), p. 551.

points out a great frequency of delinquency among the mentally retarded as a result of personality maladjustment. In a comparison of the data of her previous study of 1000 cases with Dearborn's data for 3638 school children, Glueck found a greater incidence of delinquency among the mentally retarded. These data are presented in Table 3.

TABLE 3. A COMPARISON OF THE PERCENTAGE OF JUVENILE DELINQUENTS AND SCHOOL CHILDREN AT DIFFERENT IQ LEVELS

IQ's	Per Cent of Juvenile Delinquents	Per Cent of School Children
91 or over.....	41.6	79.0
81-90.....	28.2	14.0
71-80.....	17.1	5.5
Below 70.....	13.1	1.5

Glueck concludes:

This certainly accounts for the fact that there are far more persons of low mentality in delinquent populations than in the general population. It suggests that mental deficiency, though not a direct cause of delinquency, is a complicating factor of great potency, the presence of which, in addition to other causative influences, severely breaks down the individual's resistance to antisocial behavior.¹

Glueck estimates that the expectancy of delinquency is five times as great for mentally deficient children as for normal children.

Ackerson² conducted a statistical study of the behavior traits of higher-grade mental defectives. He concludes that mentally retarded children differ from mentally normal children in that they (1) are retarded in school, (2) are slower and duller in manner, (3) are oversuggestible, (4) have preference

¹ GLUECK, *op. cit.*, p. 568. By permission of the publishers.

² LUTON ACKERSON, "Behavior Traits of Higher Grade Mental Defectives (a statistical Study)," *American Association on Mental Deficiency* (April, 1935), pp. 435-445.

for younger children as playmates, and (5) object to teasing by other children.

It appears then, from the studies just cited, that mental retardation is accompanied by personality deviations which if not caused by the mental defect are certainly the result of the mental retardation. Stated in simpler terms, mental retardation results in educational retardation. Educational retardation may result in delinquency, sensitiveness, or other defense reactions. These reactions, to be sure, are the result of mental retardation only in the social sphere in which the child lives.

THE EDUCATION OF MENTALLY RETARDED CHILDREN

Democratic society is committed to the program of educating all the children of all the people regardless of their intellectual level. Every child would be educated to develop his fullest capabilities so that he can live a happy useful life. This does not mean that the educational system can educate all by the same methods or to the same levels of achievement. Through appropriate education, however, even those at the lower intellectual levels can be aided.

Applicable types of educational procedures are employed for the various degrees of intellectual retardation. The type of education depends largely upon four classifications: namely, (1) idiots, (2) imbeciles, (3) high-grade mental defectives, and (4) borderline defectives. A description of control, care, supervision, and education of mentally retarded children is given below.

The Education of Idiots

Since idiocy is fortunately the least frequent type of mental retardation, and since idiots are considered uneducable, no

public school admits them to its classes. Consequently the only place for the care and supervision of idiots is in the home or in institutions for the mentally deficient. The idiot is not trained in academic work, is rarely taught a trade, and is never given any responsibility. Since many idiots are unable to care for their own personal needs, their education at home or in institutions consists primarily of training them to dress themselves, to keep themselves clean, and to eat discriminately. Many of them are physically incapacitated or bed-ridden and are placed in hospital wards under medical care.

The Education of Imbeciles

Imbeciles are capable of learning to dress themselves, to keep clean, and to adjust socially to others. In many cases they can be trained to do simple chores around the house or institution. They can rarely learn more than simple counting and possibly reading of a few simple words such as signs for their own protection. Most public schools exclude imbeciles (below an IQ of 50) from classes since they are considered uneducable. They either remain at home under the supervision and care of their parents, or, like idiots, are committed to institutions for the mentally deficient. In institutions they are capable of learning routine jobs, such as caring for their beds, washing dishes, taking care of lawns, and in some cases aiding in the farm duties. The care, supervision, and control of imbeciles must be exercised by the parents or by institutions since such individuals are almost always unable to survive without external care.

The Education of High-Grade Mental Defectives

The high-grade mentally defective child is considered educable, and with proper training can become independent of external care, support, and supervision. He can achieve aca-

demically from the first to the fourth grade. He can learn simple trades, participate in the world's work, and become partially or totally self-supporting.

The high-grade mentally defective child (IQ 50-70) is usually trained in special classes in the public schools or in institutions for the mentally deficient. Most such institutions admit idiots, imbeciles, high-grade mental defectives and borderline defectives. Public schools admit only the high-grade mental defective and borderline types.

The Education of the Borderline Defective

The borderline defective (IQ 70-80) is usually trained in the public schools and not in institutions. He may attend classes for the higher-grade mentally retarded, or remain in the regular grades. Some school systems have classes for the borderline defective and the dull-normal. Others send these children to pre-vocational schools where the emphasis is on manual rather than mental work. The great majority of these children, however, remain in the regular grades of the public schools. They are usually considered laggards, over-age for their group, or indifferent toward school work.

Training in Institutions

The oldest common form of organized training for mentally retarded children in the United States is in institutions for mental defectives. Almost every state has one or more institutions for such children. Practically all of the institutions accept the lower and higher types of mentally retarded children.

The Northern Wisconsin Colony and Training School at Chippewa Falls, Wisconsin, will be described as a typical institution for the mentally deficient. Out of a population of 1508 inmates (both adults and children) 587 attend the institu-

tion school. The distribution of IQ's of these 587 children is given in Table 4.

TABLE 4. THE DISTRIBUTION OF IQ'S OF 587 CHILDREN ATTENDING SCHOOL AT THE NORTHERN WISCONSIN COLONY AND TRAINING SCHOOL, CHIPPEWA FALLS, WISCONSIN¹

		Male	Female	Total
Idiots	(IQ's from 0-25).....	11	11	22
Imbeciles	(IQ's from 25-50).....	94	113	207
Morons	(IQ's from 50-70).....	121	174	295
Borderline	(IQ's from 70-80).....	20	26	46
Others	(IQ's from 80-100).....	5	12	17
Total.....		251	336	587

It will be seen from Table 4 that over one-half of the institutional school population consists of the higher-grade of mentally retarded children. Reading, writing, arithmetic, and other school subjects are taught in the institution school but greater emphasis is placed upon manual activities than is common in the public schools.

Another institution, the Wayne County Training School at Northville, Michigan, admits only the higher-grade of mentally retarded children. At this institution, with a population of about 700 mentally retarded children, an elaborate school is in operation. The children are not grouped in terms of grades as is usually done in the regular schools, but are placed in pre-primary groups, primary classes, intermediate classes, and advanced classes. The pre-primary and primary classes correspond to kindergarten and first grade; the intermediate classes to the second and third grades; and the advanced classes to the fourth to sixth grades. Besides the academic classes the school maintains classes for handwork and music as well as a manual training shop, a metal works shop, a domestic science and home-making class for the girls, a printing shop,

¹ Twenty-Third Biennial Report of the State Board of Control of Wisconsin (1936), p. 356.

and a recreation department. For children over fifteen an extensive vocational department functions to teach various vocations such as farming, baking, and the like, which exist at the institution.

The education of mentally retarded children in institutions does not differ significantly from their education in the public schools. The institutions are of course residential schools, and teachers and administrators of such institutions have control over the children for twenty-four hours a day. In institutions the training is adapted to the intellectual level of the child and to the purpose for which such training is given. An idiot who is to remain a custodial case, for example, is trained to adjust to the institutional environment. A high-grade mental defective who could be returned to the community is trained to adjust ultimately in the community.

Training in Public Schools

Public day schools usually do not attempt to educate the idiots and imbeciles. Provisions are made, however, to train the so-called educable high-grade or borderline defective child in the regular school. Mentally retarded children in the public schools are educated in (1) a segregated departmentalized special school, (2) a homogeneous special class, (3) an ungraded special class, (4) a modified special class, or in (5) the regular grades with other children. A description of these various forms of organization is given below.

The Segregated Departmentalized Special School

In some school systems a special school is devoted to the education of mentally retarded children. All of the mentally retarded children in the system are referred to this school for education and training. Since the school is usually departmentalized the children are required to go from one class to

another at each period. One part of the day is devoted to academic work, one part to handwork, art, recreation or vocational work.

There are both advantages and disadvantages to a segregated departmentalized school for retarded children operating within a school system. One of the disadvantages is the popular labeling of such a school as a "dummy school"; its pupils are soon stigmatized. Another disadvantage is that, although handwork teachers, art teachers, and other specialists can probably do a better job of teaching in their particular line, the teacher-pupil relationship becomes too impersonal. The teachers have a great number of children every day and are unable to study each child adequately. Moreover the work cannot be integrated and correlated, and the activity program suffers. The advantages of a departmentalized school are that better trained teachers in each line of work can be provided, that the equipment can be more adequate since it can be concentrated in one class, and that the teachers can learn from one another since they are working together and with the same children.

The Homogeneous Special Class

The homogeneous special class may be organized in a departmentalized special school or in classes distributed throughout the city in the regular elementary schools. A homogeneous special class consists of children of approximately the same age and the same degree of mental retardation. In such a class the teacher can teach at a particular level for all of the children. Furthermore many more group activities can be carried on with the class as a whole.

The homogeneous special class is preferred to the departmentalized method of organization or the ungraded special class. One teacher can study and understand each individual

pupil. Furthermore, classroom procedures are usually more effective if the children are at approximately the same level of achievement. Many smaller school systems, however, cannot organize such classes because they do not have a sufficient number of pupils in each neighborhood for homogeneous groupings. For that reason, ungraded or modified special classes have been organized.

The Ungraded Special Class

In some schools or smaller school systems where homogeneous groupings are not feasible ungraded special classes are organized. Children of all ages and degrees of mental retardation are placed in a classroom under the direction of one teacher. In such classes are usually found children whose achievement ranges from the pre-primary level to a more advanced educational level. In such a class the curriculum must become much more individualized than in the homogeneous class. Consequently the class must be smaller in numbers if the teacher is expected to do effective work.

In the ungraded special class even more than in the homogeneous special class the teacher must be trained in a variety of approaches at all educational levels. Whereas the teacher in a departmentalized school may teach only one subject, the teacher of the ungraded class must be a specialist in many fields. It requires a more broadly trained teacher to teach an ungraded special class than to teach the other types of classes.

The Modified Special Class

Many schools and towns do not have a sufficient number of mentally retarded children in the school or school system to organize a special class. Yet there may be seven or eight children in the community who require a modified curriculum. Instead of leaving these children scattered around in the vari-

ous classes a modified form of special class may be organized. One teacher may take these children into her class with other children who are dull or educationally retarded, and may thereby educate normals and subnormals in the same class. Usually such a class enrollment is reduced so that the teacher will have more time for individual work with the children.

The Regular Grades

Most mentally retarded children in the United States are not trained in institutions or in special classes but in the regular grade. According to the White House Conference,¹ in 1931, there were 450,000 mentally retarded pupils enrolled in the elementary grades, of whom less than 60,000 were enrolled in special classes. In 1935-36² there were 121,404 children in special classes and institutions for the mentally retarded, including private as well as public. These figures indicate that the majority of mentally retarded children are trained in the regular grades of the elementary school. Whether or not this procedure is advisable is of course dependent upon the organization of the regular grades. Many school systems have not established special classes because the per capita cost is too great, and because many states do not subsidize special classes.

SUMMARY

The following conclusions can be made concerning the mentally retarded child:

1. The mentally retarded child is one who has an IQ below 80, and who, because of intellectual and educational retarda-

¹ *White House Conference on Child Care and Protection*, Section III, Special Education, p. 6.

² EMERY M. FOSTER and ELISE H. MARTENS, *Statistics of Special Schools and Classes for Exceptional Children* (United States Department of the Interior, Bulletin No. 2, 1937), p. 12.

tion, requires a special curriculum adapted to his capacities and limitations.

2. About two to five per cent of the juvenile population are mentally retarded and require a special curriculum for their growth and development.

3. In physical characteristics such as height and weight, and in motor development, the mentally retarded are on the average only slightly inferior to the normals. There is a great overlapping of the subnormals and normals in these characteristics.

4. In functions such as speech, mental growth, and learning ability the mentally retarded child is significantly inferior to the normal child.

5. The investigations on play activities, occupational activities, and personality seem to indicate that the mentally retarded have greater difficulties than normals.

6. Idiots and imbeciles are considered uneducable and are usually cared for at home or in institutions for the mentally deficient.

7. High-grade and borderline mentally retarded children are educable and can be trained in the rudiments of reading, and in some cases can reach as high as the sixth or seventh grade. Since reading is a very important school subject in our present civilization, society may well devote time and energy to such training.

8. The schools should not require the mentally retarded to keep up with the curriculum constructed for the normal child, but should have a curriculum adapted to his needs and capabilities. Furthermore, since intellectual development and learning ability are the main deficiencies of the mentally retarded child, and since there is no overlapping between the normals and subnormals in these functions, it would appear that greater emphasis should be placed on the study of their learning capabilities and techniques for the most efficient methods of instructions.

CHAPTER II

The Reading Status of Mentally Retarded Children

THE READING ACHIEVEMENT OF MENTALLY RETARDED CHILDREN

THE TEACHER of the mentally retarded must know what to expect of the various levels of slow-learning children. Does a child of fourteen with a mental age of nine read like an average fourteen-year-old child or like an average nine-year-old child? Should a mentally retarded child begin reading before the mental age of six, or at the mental age of six, or should he be delayed beyond the mental age of six? Partial answers to these and similar questions are found in the surveys in this field.

Surveys on Achievement of Mentally Retarded Children

Merrill¹ has made one of the most extensive surveys of the achievement of mentally retarded children in relation to their intelligence, and has compared their achievement with normal and superior children of the same mental age. Table 5 gives Merrill's comparison of mentally retarded, normal, and superior children on the Stanford Achievement Reading Test.

¹ MAUD A. MERRILL, "On the Relation of Intelligence to Achievement in Case of Mentally Retarded Children," *Comparative Psychology Monographs* (September, 1924), p. 68.

THE STANFORD ACHIEVEMENT READING TEST
(Adapted from Merrill)

Table 5 shows approximately equal performance for the retarded, normal, and superior groups for the same mental ages. The normal and superior groups with mental ages of ten to eleven obtained higher scores than the retarded group of approximately the same mental ages. The differences, however, were not statistically significant.

Merrill¹ made a comparison of the accomplishment ratios in reading of the retarded and superior groups. The accomplishment ratios presented in Table 6 were obtained by dividing the reading age by the mental age. These ratios give the relationship of mental age to reading achievement. The table shows that, with the exception of the mental ages of ten, the retarded children appear to read up to their mental ages, as do the superior group.

TABLE 6. A COMPARISON OF THE ACCOMPLISHMENT RATIOS IN
READING OF RETARDED AND SUPERIOR CHILDREN OF THE
SAME MENTAL AGE
(After Merrill)

Average Mental Age	Accomplishment Ratios of Retarded Group	Accomplishment Ratios of Superior Group
7-1	100	
8-0	98	
8-11	101	91
9-10	97	99
10-10	94	104

Bennett² compared the reading achievement of fifty mentally retarded children in special classes with that of mentally retarded children remaining in the regular grades. The children were matched for mental ages, chronological ages, and intelligence quotients. She found that those remaining in the grades scored higher on the four types of the Gates Silent Read-

¹ *Op. cit.*, p. 76.

² A. BENNETT, *A Comparative Study of Subnormal Children in the Elementary Grades*, p. 23. Bureau of Publications, Teachers College, Columbia University.

ing Tests than the mentally retarded children who were in special classes. Both groups, however, appeared to read up to their mental age. The mean accomplishment quotients (that is, the reading age divided by the mental age) for the two groups are shown in Table 7.

TABLE 7. MEAN ACCOMPLISHMENT QUOTIENTS OF GRADE GROUP AND SPECIAL GROUP ON GATES READING TESTS,
TYPES A, B, C, AND D
(Adapted from Bennett¹)

Reading Test	Mean		Diff. S. D. Diff.
	Grade Group	Special Group	
Type A.....	110.97	107.29	1.07
Type B.....	110.26	106.85	.90
Type C.....	104.67	97.00	2.61
Type D.....	104.69	96.64	3.07

Table 7 shows that the one hundred mentally retarded children (Mean IQ 72) in Bennett's group were on the average a little higher in reading age than in mental age. The grade group appeared to be superior to the special class group. This difference, however, was ascribed by Bennett² to a factor of selection. Apparently mentally retarded children who are severely retarded educationally are referred to special classes by the grade teachers. Mentally retarded children who are not so markedly retarded educationally may not be referred to a special class.

Further examination of Bennett's data shows that when the mental ages range from 8 to 8.9 years the average reading achievement is low third grade. When the mental ages are between 9 and 9.9 years, the average reading achievement is high third grade, and when the mental ages range from 10 to

¹ *Op. cit.*, p. 23. By permission of the publishers.

² *Op. cit.*, p. 77.

10.9 years, the reading achievement is beginning fourth grade.

Kirk¹ surveyed the reading progress of 100 unselected mentally retarded children in an institution. The Stanford-Binet Intelligence Test and the Stanford Achievement Reading Test were used. The average age of the 100 children was 14-10 at the time of the survey. The average IQ was 69 and the average mental age was a little over ten years. The average reading achievement was grade 4.3. These results are similar to Bennett's.

MacIntyre² asserts that mentally retarded children can read better than is indicated by their mental level. A re-evaluation of her data shows that for thirty-six children the average mental age was 9-10, and the average reading grade was 4.9. Her method of teaching utilized a phonic system.

On the other hand, Kelly³ presents results showing that the reading achievement of mentally retarded children was lower than their mental level. Her study of 1000 subnormal children, taught primarily by the activity method and tested by the Stanford-Binet Intelligence Test and the Metropolitan Group Reading Test, showed the following results.

1. The median reading achievement for children having a 6 to 7 year mental level was below the first grade.
2. The median reading achievement for children having a 7 to 8 year mental level was first grade.

¹ SAMUEL A. KIRK, "The Effects of Remedial Reading on the Educational Progress and Personality Adjustment of High Grade Mentally Deficient Problem Children," *Journal of Juvenile Research* (July, 1934), pp. 140-162.

² E. MILDRED MACINTYRE, "Teaching of Reading to Mentally Defective Children," *American Association on Mental Deficiency* (May, 1937), pp. 59-67.

³ ELIZABETH KELLY, "The Improvement of Reading in Special Classes for Mentally Retarded Children," *American Association on Mental Deficiency* (May, 1934), pp. 67-73.

3. The median reading achievement for children having an 8 to 9 year mental level was second grade.

4. The median reading achievement for those having a 9 to 10 year mental level was third grade.

5. The median reading achievement for those having a 10 to 11 year mental level was fourth grade.

Gates presents data on the reading attainments of pupils of different mentality. The reading ages and grades given in Table 8 were obtained from the three Gates Primary Reading Tests.

TABLE 8. GATES' DATA ON READING ATTAINMENTS OF PUPILS OF DIFFERENT MENTALITY¹

Number of Pupils	IQ Range	Mean IQ	Mean Chrono-logical Age	Mean Years in School	Mean Mental Age	Mean Reading Age	Mean Reading Grade
5.....	80-89	82	9.56	3.1	7.84	8.15	2.65
20.....	70-79	73	10.62	4.0	7.75	8.10	2.60
34.....	60-69	66	11.28	4.6	7.45	7.93	2.43
15.....	50-59	55	12.34	5.5	6.79	7.67	2.17
5.....	38-49	43	13.77	6.5	5.93	6.76	1.36

Table 8 shows that on the average those having mental ages around six are beginning readers; those having mental ages of a little below seven are beginning second-grade readers; and those having mental ages a little under eight are high second-grade readers. This data agrees with that of previously cited studies.

Attainments to be Expected from Various Age and Intelligence Levels

Many surveys have shown that reading is significantly correlated with intelligence; that is, the higher the intelligence the

¹ ARTHUR I. GATES, *Interest and Ability in Reading*, p. 14. By permission of The Macmillan Company, publishers.

more advanced the reading. Table 9 may be used as a rough guide to determine whether or not children are reading up to their capacities. Although mental age is not a perfect indicator of the capacity to read, it is probably the best single indicator of capacity that we now have.

TABLE 9. WHAT SHOULD BE EXPECTED OF SUCCESSIVE AGE AND INTELLIGENCE LEVELS

IQ	Age of Beginning Reading	Minimum and Maximum Reading Achievement to Expect at the Completion of School
Below 50.....	14-16	Will learn only a few words Reading instruction futile
50-59.....	10-12	First to third grade
60-69.....	9-10	Second to fourth grade
70-79.....	8-9	Third to seventh grade

Table 9 may serve to guide those who question whether or not a child is reading up to his capacity. A grade-school teacher may believe a child to be retarded in reading; yet the child's reading achievement may be in keeping with his intelligence level. The determination of the intelligence level by a competent examiner will serve to guide the teacher in estimating whether or not a child is deficient in reading or deficient in intelligence and consequently in reading.

Judging the reading of mentally retarded children only in terms of reading grades or grade scores on reading tests is not the most adequate procedure. Tests are given once or twice a year at the most; teachers cannot wait until a test is given to evaluate the results of instruction. Reading involves more than just a test score. Teachers must know and observe the individual reading activities of children of various ages and intelligence levels. They should be able to evaluate the ability of a child in relation to what should be expected of him. A description of the reading activities of different levels is given below:

Ages Seven to Nine with Mental Ages of Four to Six

Mentally retarded children of this level have usually not begun to read. They should, however, be showing an interest in reading, an interest in books, pictures, interpretations of pictures, in signs, labels, their own names, and experiences related to reading. Some of them can begin chart reading and incidental reading if they have shown sufficient capacity for such performance. For a child of this level an intensive reading readiness program should be carried out. Such a program is described in Chapter III.

Ages Nine to Eleven with Mental Ages of Five and One-Half to Seven

Children whose mental ages are five and one-half to seven should be having at least an intensive reading readiness program with incidental learning of signs, labels, charts, and other materials. Many of these children who have had an adequate reading readiness program can begin reading stories of their own experiences from the board and from charts. They should be interested also in drawing pictures, interpreting pictures, and reading or writing little stories about these pictures. Many are capable of making little booklets of their own from the stories which they have helped formulate and which they have read from charts. The more advanced children will read primers and simple books. Interest in reading is manifested when the child spontaneously selects a book to look at the pictures and read some of the selections.

Ages Eleven to Thirteen with Mental Ages of Seven to Eight and One-Half

Mentally retarded children whose mental ages are seven to eight and one-half are usually in the beginning reading stage. They are reading first- to third-grade books with adequate com-

prehension. They are somewhat slow in reading but are grouping words and phrases into thought units. They are beginning a method of word-recognition and should be capable of recognizing new words from context clues, phonic analysis, or some other method of word-recognition. Interest in reading usually is shown by the child when he reads simple books for information and for pleasure. Progress in reading at this level should be manifested in numerous in-and-out-of-school activities such as reading parts of the newspaper, reading directions for games, projects, and other activities. A child of this mental level should be reading silently with adequate comprehension.

Ages Thirteen to Sixteen with Mental Ages of Eight and One-Half to Eleven

Children of this mental level should be utilizing reading for many activities. They should be reading books from the third to the fifth grade. There are many books¹ with a reduced vocabulary which are adapted to fourth- and fifth-grade levels but which appeal to adolescent children. Reading is utilized in the social studies, in projects, and in reading directions for manual activities such as the making of articles from tin cans, building airplanes, or cooking. At this level children could begin reading newspapers, withdrawing books from the library, using a dictionary, using the telephone directory, and reading maps. Most of the child's reading should now be silent rather than oral. Vocabulary and comprehension should have increased. Independent methods of word-recognition, of looking up words in the dictionary, of reading critically should now be established. Spontaneous reading of books for information and pleasure should be encouraged.

¹ See Bibliography in Appendix B.

GROUPING MENTALLY RETARDED CHILDREN

In grouping mentally retarded children, whether they are in one ungraded class or in different classes of homogeneous age groupings, the following divisions of instruction should be observed.

Children Having IQ's of 50 and Below

These children should be trained to read signs and labels for their protection. Except in rare cases no attempt should be made to teach them to read since they are incapable of learning.

Pre-Primary Classes, or Children Having Chronological Ages of Eight to Eleven and Mental Ages Below Six

These children should be given kindergarten activities and the pre-reading exercises presented in Chapter III.

Primary Groups, or Children Having Ages of Nine to Twelve and Mental Ages of Six to Seven

These children should be given beginning reading as suggested in Chapter IV.

Intermediate Groups, or Children Having Ages of Ten to Thirteen and Mental Ages of Seven to Eight

These children should be given reading instruction as presented in Chapter V.

Advanced Groups, or Children Having Ages of Twelve to Sixteen and Mental Ages Above Eight

These children should be given reading instructions correlated with their other school activities as is done in the fourth, fifth, and sixth grades of the regular elementary school.

DIFFERENCES BETWEEN NORMAL AND MENTALLY
RETARDED CHILDREN IN LEARNING TO READ

A survey of books and articles on the teaching of reading reveals a paucity of information on instruction for mentally retarded children. Dolch¹ devotes about one page to mental immaturity while Gates² devotes as much as seven pages to the pupil with low intelligence. Most writers on reading assume that when a child is below 80 IQ he cannot learn to read. Consequently little time and space is devoted to this problem. Practically all of the books and manuals on the teaching of reading give methods and techniques applicable to the mentally normal child who begins first-grade work (and consequently beginning reading) at the age of six. Although many of these techniques and methods are applicable to the teaching of subnormal children, many more are not. A few typical cases are cited below.

The Case of John

John was referred to a special class for mentally retarded children at the age of ten. He was physically normal, had the strength of an average ten-year-old child, and from external appearances seemed to be an average boy. On several intelligence tests he obtained an IQ of 60, giving him a mental age of six years. He was about ready to learn to read when he entered the special class at the chronological age of ten and a mental age of six. Yet he had been in the regular grades for four years having been admitted to the first grade at the age of six.

In the first grade John's mental age was approximately

¹ EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, pp. 248-249.

² ARTHUR I. GATES, *The Improvement of Reading*, pp. 403-410.

three and one-half years. At such a mental level he naturally could not learn to read during the entire first year. The principal had John retained in the first grade for another year. At this time John was seven years old and his mental age was four years. Obviously John still could not learn to read with a mental age of four and consequently spent a futile second year going over beginning reading materials and first-grade reading books.

Since the school disliked to force John to repeat the first grade a second time, he was promoted to the second grade. The curriculum of the second grade was of course more advanced than the first and John had even greater difficulty in mastering the work. Although John's mental age had also increased and was now around the five-year mental level, it was still too low for beginning reading. At the end of the first year in the second grade, or John's third year in school, he could not yet read.

This time the school decided to have him repeat the second grade. When, at the end of his fourth year in school, John was still unable to read, the principal decided to send him to a special class for retarded children.

As was stated before, John was sent to the special class at ten years of age, with a mental age of six years. He was, according to his mental level, just ready to begin reading. Yet he differed markedly from the normal child just ready to begin reading, who enters school at the age of six and has a mental level of six.

The Case of George

George was referred to a special class at the age of nine. He was physically average on the medical examination. His IQ was 70 on the Stanford-Binet. His mental age was six years and three months. Like John he was admitted to the first

grade at the age of six, and since his mental age at that time was a little over four years, he failed to learn to read. During his second year in the first grade he was seven years old and had a mental age of about five years. Again, because George was mentally too immature to learn to read, he failed a second time but was nevertheless promoted to the second grade. In the second grade he was eight years old and had a mental age of five years and seven months, but since he could not cope with the second-grade readers and because he was still mentally immature, he again failed. This time the school authorities decided that he was uneducable and sent him to a special class. He was now nine years old, had failed for three years in school, and had reached the mental level of a little over six years, the mental age which warrants beginning reading.

The Case of Bill

Bill began school in the first grade at the age of six. He also was physically normal and his mental age was six years and three months, since his IQ was 105. He was just ready to begin reading when he started school.

A Comparison of Normal and Retarded Children in Learning to Read

Considering the cases of John, George, and Bill, we have two typical mentally retarded children and one typical mentally normal child. Comparing these children we find striking similarities and differences.

1. The three children, John at the age of ten, George at the age of nine, and Bill at the age of six, could not read.
2. The three children had mental ages of about six years.
3. The three children were ready to begin reading according to their mental ages.
4. In the course of the next year Bill, the mentally normal

child, will make one year's progress in reading; George and John, the mentally retarded children, will learn to read but will progress at a much slower rate than the mentally normal child. This is due to the difference in rate of mental growth. Bill, the mentally normal child, will have a mental age of 7-4 after he has attended school one year (at the age of seven). John will have a mental age of 6-7 after one year of school in the special class (at the age of eleven), and George will have a mental age of 7-0 after he has attended the special school for one year (at the age of ten). The rate of learning to read will correspond closely to their rate of mental growth.

5. George and John have failed in reading for three and four years, respectively, in the regular public school. They have become discouraged because of constant attempts at learning to read and failure to do so. Children of their own age have passed into more advanced grades while they were forced to repeat grades. Both mentally retarded children have had reading materials presented to them over and over again without success. Bill, the normal child, on the other hand, has not faced failure. He has not had reading materials presented to him before. He has not seen other children pass ahead of him to more advanced grades. He has not had other children call him "dummy." He has not had a teacher become irritated at him for not learning with the other children. Life continues to be undisturbed for the normal child, whereas for John and George, the mentally retarded children, life has been a series of failures, reprimands, and gibes. These differences in development and experiences between the mentally retarded children, represented by John and George, and the average child, represented by Bill, are fundamentally important with regard to the teaching of reading. Mentally retarded children consequently require a somewhat different approach to the reading problem than do normal children.

6. John and George, the mentally retarded children, are only six years mentally and just about ready to read, as is the normal child. The mentally retarded children, however, are chronologically nine and ten years old, whereas the normal child is still approximately six years of age. The mentally retarded children are therefore physically more mature, are stronger, have better motor co-ordination, and can probably do many things with their hands that the normal child cannot do. They are physically more mature because of their age, but mentally similar to the six-year-old normal child.

7. There are some differences between mentally retarded children and normal children in environmental and experiential backgrounds. These differences are reflected in the language usage of the mentally retarded child which is significantly poorer than that of the normal child. We do not have experimental evidence of all the differences between the normal and subnormal child. From the items indicated above, however, it should be obvious that the methods of teaching reading to the normal child who begins school at the age of six will have to differ in some respects from the methods of teaching the subnormal child who has failed in school for a number of years.

SOME DIFFERENCES IN TEACHING READING TO MENTALLY RETARDED CHILDREN

From the characteristics of the mentally retarded child given in Chapter I and the comments made in the present chapter some major differences in the teaching of reading to mentally retarded children may be stated:

1. If the child has attended school for several years and has failed, as is often the case with subnormal children, the teacher should first re-establish the child's security which has been

shattered during his years of failure. She will have to do this by presenting the child with materials with which he can succeed, so that confidence may be re-established.

2. The teaching of beginning reading should be delayed beyond the life age of six since the mental level is far below six. This delay will minimize failure on the part of the child, especially if preceded by a program of pre-reading activities.

3. Since the rate of learning of subnormal children is slower than that of normals, it is necessary to extend and prolong the various reading periods. Whereas with the normal child chart materials may be presented for the first six to twelve weeks of the first grade, with the mentally retarded child such pre-reading activities and pre-book reading must be extended over a longer period of time.

4. Since many more repetitions must be given to the mentally retarded child, greater varieties of presentations must be made. This requires a greater degree of ingenuity on the part of the teacher of mentally retarded children.

5. It is doubtful if a primer, pre-primer, or first reader is interesting to a ten- or eleven-year-old child. These books have been written for the normal child of six years. A subnormal child may be more mature in some respects and may not be interested in the materials presented in these first readers. Consequently some changes will have to be made in presenting mentally retarded children with reading materials. The materials will have to be adapted in such a way as to include simple vocabulary, many repetitions, yet an interest content which appeals to children beyond the age of six.

SUMMARY

1. Surveys have shown that mentally retarded children can learn to read up to their mental age.

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2. The procedure of grouping mentally retarded children in (a) pre-primary, (b) primary, (c) intermediate, and (d) advanced reading groups or classes for effective instruction is superior to the grouping according to grades.
3. Mentally retarded children differ from normal children in learning to read in that they (a) cannot be expected to begin learning to read at the life age of six, (b) learn to read at a slower rate, (c) become discouraged because of continual failure, and (d) usually have poorer environmental and experiential backgrounds, reflected in language usage.
4. Teaching reading to a mentally retarded child should include (a) re-establishing the child's confidence which has been shattered through failure in school for several years, (b) delaying reading beyond the age of six or until a sufficient mental age for reading has been attained, (c) adapting the reading periods by prolonging the period of each stage to conform to the slow-learning ability of the children, (d) giving more repetitions in a variety of presentations, and (e) presenting the children with easy reading materials with an interest content more in harmony with the child's age and experience.

CHAPTER III

Pre-Reading Activities for Mentally Retarded Children

THE NEED FOR PRE-READING ACTIVITIES

IN CHAPTER II it was pointed out that the teaching of reading should be delayed until the slow-learning child has attained sufficient mental maturity to learn to read. Immediately the question arises, as in the case of John, "What are we going to do for the several years before beginning the teaching of reading?" Obviously, there are many things besides reading that such a child should learn in school. There are also certain activities which, if carefully executed, will prepare the child for beginning reading. This period may be called the pre-reading period and corresponds to the kindergarten period for the normal child.

Kindergartens for normal four- or five-year-old children attempt to socialize the child and to prepare him for future school activities. Many activities in the kindergartens involve gross motor skills which have already been developed in the mentally retarded child who is older and more developed physically than the normal child of a corresponding mental level. It is therefore important to discover the factors which function in reading so that the mentally retarded child may be better prepared for this activity.

Little research has been done to discover the reading apti-

tudes of mentally subnormal children. We can, however, from observation and from researches done on reading readiness with mentally normal children, get some insight into the training necessary to develop certain aptitudes in the slow-learning child. Some factors contributory to reading readiness may be listed as follows:

1. A mental age of six or more.
2. Adequate language development required for reading.
3. Memory for sentences and ideas.
4. Visual memory and visual discrimination.
5. Auditory memory and discrimination.
6. Correct enunciation and pronunciation.
7. Motor ability.
8. Visual maturity.
9. Motivation.

TRAINING READING APTITUDES

Kirk,¹ in a survey of the reading aptitudes of mentally retarded children, has found that such children are deficient in some functions and superior in others. The differences vary in the schools according to the diverse emphases given to the various aspects of instruction.

To determine to what extent reading aptitudes can be developed, six slow-learning children who could not read were selected from an ungraded class which included children who were able to read, a few as high as the fourth-grade level. The Monroe Reading Aptitude Test² was given to these six children.

¹ SAMUEL A. KIRK, "Reading Aptitudes of Mentally Retarded Children," *American Association on Mental Deficiency* (May, 1939).

² MARION MONROE, *Reading Aptitude Tests*, Boston: Houghton Mifflin Company.

Then, the six children were given a ten weeks' training program. The teacher prepared and planned activities which would develop all of the functions with the exception of motor abilities. Emphasis was placed on visual memory, auditory memory, articulation, and sentence length, the functions in which the children scored lowest in the test. The training of aptitudes was given to these children during a recitation period of about one-half hour a day when the group was called to the front of the room for recitation. Also, the group did seat work while the more advanced children were having their recitation period. Many activities such as excursions, dramatization, handwork, and the like, were conducted for the entire class.

At the conclusion of the ten-week training period the Monroe Reading Aptitude Test was repeated. The results are presented in Figure 1. The solid line shows the average percentile scores of the children before the training period. The dotted line shows the percentile scores after the ten-week training period. From Figure 1 it will be noted that gains were made in all functions with the exception of motor abilities, which were not emphasized in the training period over and above the regular motor training given in rhythms and hand-work. The most significant gains were made in visual memory, auditory memory, articulation, and sentence length, the functions in which the children had been most deficient.

In addition to the measured gains in reading aptitudes following the training period, marked improvement in behavior and interest in school activities was noted by the teacher. Although these children had mental ages of six years, and were from eight to ten years of age physically, they had not yet learned to read, in spite of several years of reading instruction. Because of their failure to learn and their inability to succeed in school they had become distractible, inattentive, and gen-

PRE-READING ACTIVITIES

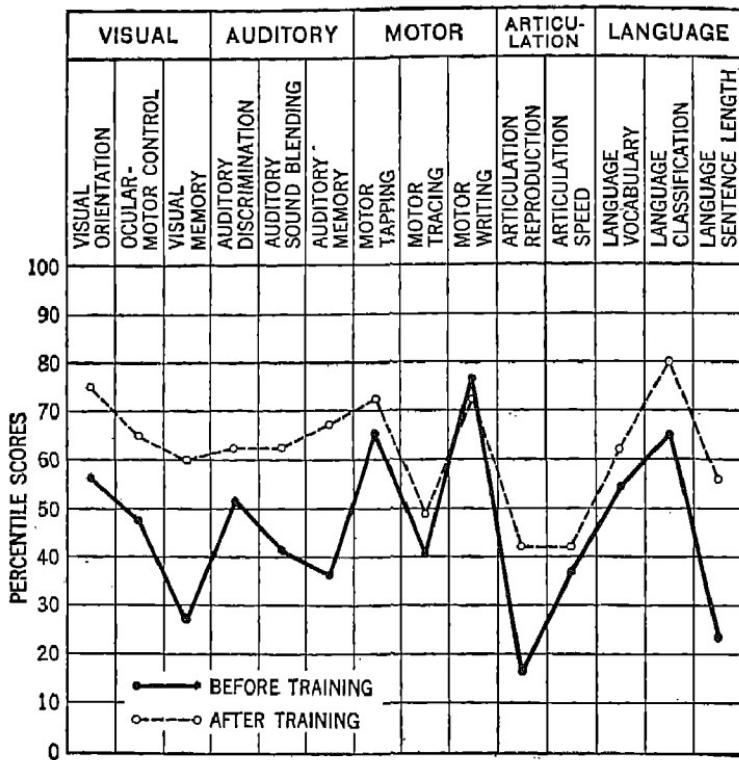


FIGURE I. RESULTS OF TRAINING READING APTIITUDES

erally disorganized. The reading readiness program offered something they could do and something in which they could succeed. They became more enthusiastic about school and welcomed their recitation period.

Although the training experiment was conducted with a small group of children and for a limited time, results suggest that reading aptitudes can be developed in the classroom in a relatively short period of time. Also, the experiment demonstrates the advisability of preparing mentally retarded children

for beginning reading. Such preparation forestalls the effects of continued failure caused by the teaching of reading directly.

ACTIVITIES FOR DEVELOPING READING READINESS

Mental Maturity

It is not known specifically when a mentally retarded child should begin to learn to read. However, it is likely that few mentally retarded children learn to read before they have attained a mental age of six years. Davidson¹ taught children to read at a mental age of four. Another case can be cited of a boy who, though mentally six, could read at the third-grade level. This boy was twelve years old, had been in special schools for six years, and had an IQ of 50. When he reached the mental age of six (intelligence determined by four intelligence tests at different periods), he was capable of reading at about the third-grade level. However, this case was an exception and did not represent a typical mentally retarded child. Most retarded children seldom learn to read at all before the mental age of six.

There are two opposing views concerning the educability of intelligence. It is believed by some that there are no methods of training which would develop intelligence or mental age faster than the child is naturally growing mentally. They recommend that for the teaching of reading it is best to wait and delay reading until the child has reached sufficient mental maturity to warrant beginning reading. Other groups maintain that intelligence is largely the product of early home and school training and that it is best to establish a stimulating

¹ HELEN P. DAVIDSON, "An Experimental Study of Bright, Average, and Dull Children at the Four Year Mental Level," *Genetic Psychology Monographs* (1931), pp. 119-290.

environment which will accelerate mental growth. If such is the case and mental maturity can be attained earlier, then the teaching of reading could begin earlier than would be possible if mental growth had not been so accelerated.

The studies on the inheritance of mental deficiency led Goddard¹ and others to the conclusion that mental deficiency is inherited in about eighty per cent of the cases. Training could not alleviate mental deficiency. In recent years, however, the view of Goddard, which had been widely accepted, has been strikingly challenged. Freeman's² study of foster children in 1927 showed that favorable environmental factors tended to raise the IQ of children. Skeels,³ Skodak,⁴ and Wellman⁵ have presented evidence which shows that if a child is given a stimulating environment at an early age the IQ tends to go up. In one study Skeels⁶ showed that when children of mentally retarded mothers were placed in adequate foster homes before the age of six months, they showed average and superior IQ's three to five years later. The IQ's of these children, whose true mothers were below 80 IQ, were found to be on the average over 112. These figures were similar to IQ's of children from true mothers whose IQ's were above 100. Another study

¹ H. H. GODDARD, *Feeble-Mindedness: Its Causes and Consequences*, pp. 438-443.

² FRANK N. FREEMAN, "The Influence of Environment on the Intelligence, School Achievement, and Conduct of Foster Children," *The Twenty-Seventh Yearbook of the National Society for the Study of Education, Nature and Nurture*, Part I, pp. 103-218.

³ HAROLD M. SKEELS, "Mental Development of Children in Foster Homes," *Journal of Consulting Psychology* (March-April, 1938), pp. 33-43.

⁴ MARIE SKODAK, "The Mental Development of Adopted Children Whose True Mothers are Feeble-Minded," *Child Development* (September, 1938), pp. 303-308.

⁵ BETHE L. WELLMAN, "Guiding Mental Development," *Childhood Education* (November, 1938), pp. 108-112.

⁶ HAROLD M. SKEELS, *op. cit.*

by Skeels and others¹ showed that when pre-school age children in an orphanage were given pre-school experiences the IQ tended to rise. Similar children who were not given such experience and who remained in the routinized institutional environment tended to drop in IQ.

Although recent evidence on the influence of environment on the IQ is taken by some to indicate that intelligence is the product of training, there are others who cling to the view that intelligence is inherited. The answer is probably somewhere between the two views. It is probable that inheritance fixes the limits of intelligence but that there is a large range within which the environment can raise or lower the IQ. It is possible that a child may be born with an intelligence range of 70 to 110. A stimulating environment will probably show his IQ to be 110, while a very routinized, unstimulating environment will show his IQ to be 70. That such may be the case is suggested from the data of Freeman² shown in Table 10. Freeman summarizes the studies which have been made on fraternal twins reared together, identical twins reared together, and identical twins separated in infancy. Table 10 shows that in physical traits such as height and weight the change of environment does not alter the identity of the twins. The correlations for such factors in each group of identical twins, those reared together and those reared apart, range from .88 to .98. For intelligence, however, there is a marked difference. The identical twins reared together maintain a correlation of around .90, whereas the identical twins reared apart show a correlation of a little over .60. The fraternal twins reared together show a correlation in intelligence similar

¹ HAROLD M. SKEELS, *et al.*, "A Study of Environmental Stimulation," *University of Iowa Studies*, Iowa City: University (December, 1938), pp. 1-191.

² FRANK N. FREEMAN, *Mental Tests*, Revised edition, p. 428.

to that of the identical twins reared apart. The results show that environment does alter intelligence of children with identical heredity, yet the change is not as great as is usually found among siblings who have been separated in infancy, nor even as great as siblings raised together. From this data it may be concluded that inheritance does determine the rate of mental growth to some extent while environment also contributes something toward the rate of mental development.

TABLE 10. CORRELATIONS FOR IDENTICAL TWINS REARED
TOGETHER AND APART, AND FOR FRATERNAL TWINS
REARED TOGETHER
(Adapted from Freeman ¹)

Trait	Identical Twins Reared Together	Fraternal Twins Reared Together	Identical Twins Reared Apart
Standing height.....	.981	.934	.969
Weight.....	.973	.900	.886
Binet mental age922	.831	.637
Binet IQ.....	.910	.640	.670
Otis IQ.....	.922	.621	.727
Stanford achievement.....	.955	.883	.507

From the studies that have been cited it appears that: (1) mental retardation of some children (excluding physical or clinical cases) is partly the product of early home training and lack of adequate pre-school experience, (2) mentally retarded children, if neglected, may decrease in IQ, and (3) mentally retarded children may be aided somewhat in accelerating their mental growth as measured by the modern intelligence test.

If intelligence can be accelerated in some children the question is: What factors in an environment will tend to increase mental growth? Wellman ² asserts that increases in intelli-

¹ FRANK N. FREEMAN, *op. cit.*, p. 428. By permission of Houghton Mifflin Company, publishers.

² BETH L. WELLMAN, "Guiding Mental Development," *Childhood Education* (November, 1938), pp. 108-112.

gence of children can be accomplished by (1) providing the child with an opportunity for a life rich in experiences, (2) extensions of the environment, and (3) providing an atmosphere which stimulates thinking. These suggestions for increasing intelligence may be very valuable, but they are not sufficiently specific to be put into practice.

In any attempt to train intelligence it is important to know two things, (1) the nature of intelligence, and (2) the educational activities which will train it. For the first, Thurstone¹ may have given a partial answer. By means of the factorial analysis technique he has discovered that intelligence consists of seven primary mental abilities which he has called *number facility*, *word fluency*, *visualization*, *memory*, *perceptual speed*, *induction*, and *verbal reasoning*. If Thurstone is correct in his analysis of the nature of intelligence, and if these primary abilities can be trained,² it would seem that some approach to the training of intelligence can be carried out. Probably the curriculum of a special class of young mentally retarded children should include games and activities which will develop the primary mental abilities. For example, young children may be trained in *perceptual speed* through exercises in finding a picture among a series of pictures, or an item in a large picture. Similar mental exercises and games can be formulated for all of the primary mental abilities.

Since no one has attempted to train the primary mental abilities, it is not known whether such training is possible. Furthermore training of specific functions may not transfer to other mental activities. Whether or not mental maturity can be accelerated by the approach given above must await exper-

¹ LOUIS L. THURSTONE, "Primary Mental Abilities," *Psychometrika Monographs* (1938), pp. 1-121.

² Thurstone does not state whether or not these abilities are inherited or the product of experience.

imentation in this field. However, recent evidence on the educability of intelligence is a hopeful sign; if future experimentation shows the way, mental maturity can be accelerated. If such is the case the teaching of reading can begin as soon as the mentality of children has developed sufficiently to warrant instruction in reading.

Language Development

Learning to read involves an understanding of the English language. Mentally backward children usually come from poor home backgrounds and consequently are for the most part deficient in language ability. Monroe¹ found a correlation of .50 between language ability and success in reading on her reading aptitude test with normal children.

Chipman² studied the vocabulary of older mentally deficient children and concluded: "One point does seem self-evident, that the subnormal individual, without guidance, functions far below his apparent mental capacity in his handling of words and the spontaneous expression of ideas." Kirk³ found, in a survey of sixty-six young mentally retarded children, that this group was deficient in sentence length as compared to normals of the same mental age.

In view of the deficiency in language ability found in mentally retarded children it is imperative that the teacher train these children in better usage of the English language during the pre-reading period. Training in this function will make beginning reading easier and more efficient for such children.

To develop language facility the following exercises are suggested:

¹ MARION MONROE, *Reading Aptitude Tests Manual of Directions*, p. 5.

² CATHERINE E. CHIPMAN, "The Vocabulary of Mental Defectives," *American Association on Mental Deficiency* (April, 1935), pp. 485-504.

³ SAMUEL A. KIRK, *op. cit.*

1. Confront the children in the classroom with problem situations for which the solutions involve real life activities. Allow them to work out these problems themselves. The teacher can take up any situation which arises in the classroom and which presents a problem. Where should the pencils be kept? What excursion shall we take? How shall we arrange the room? These problems give rise to spontaneous oral expression and discussion on the part of the children. In this way the language development of the mentally retarded child can be trained.

The principles set down by the *Twenty-Fourth Yearbook*¹ may well be reviewed here since they are applicable to mentally retarded children.

- a. Provide numerous opportunities for pupils to talk freely about matters in which they are keenly interested.
- b. Secure freedom and spontaneity in speaking at all times.
- c. Provide real motives for speaking to genuine audience situations.
- d. Encourage pupils to speak freely and naturally, at first in relatively short sentences, if necessary. Later they should be given guidance in presenting longer series of ideas in good sequence.
- e. Encourage pupils to use any new words which fit naturally into class discussions and activities.

Pennell and Cusack² list a series of activities which can be carried on in the classroom and which tend to develop language ability in children. They list activities for acquiring a rich store of meanings which can be attained by discussing recent excursions, by constructing articles, making a garden, playing

¹ *Twenty-Fourth Yearbook of the National Society for the Study of Education*, Part I, p. 29.

² MARY E. PENNELL and ALICE M. CUSACK, *The Teaching of Reading for Better Living*, p. 171.

games, caring for pets, listening to stories, and so forth. For the development of the ability to think, they list activities to be attained by planning what to make, discussing the plans, suggesting new plans, and carrying them out.

2. Show the children an interesting picture which they are to describe and interpret. The children will at first tend to describe the picture in words or short sentences. The teacher should aid them to express their ideas in longer sentences and in logical sequence. In this way more complicated language usage is developed.

3. Read or tell children stories. This usually provides good training in language development. The children may also tell stories to their class or retell the story that the teacher has read. In this way language usage is developed and additional vocabulary training is given.

4. Encourage children to tell the class about interesting situations which they have experienced at home. They may tell about their dog, their cat, or the new-born baby. In all these cases the teacher should aim to develop good English usage and to increase meaningful vocabulary.

5. Introduce games with speaking parts. They are interesting and valuable in developing language ability. The games may be arranged by the teacher as part of the classroom activities.

6. Make toy telephones in the classroom. The children can carry out conversations over these telephones.

7. Use dramatization with learned parts as a valuable pre-reading activity for the purpose of developing language usage. Dramatization also aids in the training of memory for sentences.

8. Increase the child's vocabulary, not by specific drill on isolated words, but by the introduction of new words in many of the activities listed above. The teacher should keep in

mind that free expression and spontaneous speech are not sufficient to increase the vocabulary of the child. She should attempt continually to add new words to the child's meaningful vocabulary during all of the activities listed above.

The various activities and exercises listed are only suggestive of methods that may be used in the classroom to develop language ability in mentally retarded children. Many of these activities are carried out in the kindergartens, in regular grades, and in special classes, but in many cases the teachers do not know the purpose of such training. Knowing the purpose aids the teacher in planning and executing purposeful activities in the place of mere busy work. It should be remembered, also, that certain periods of the day need not be set aside for the purpose of training language ability. This training can be carried out at any time in the day as a part of other classroom activities.

Training the Memory for Sentences and Ideas

Reading involves not only the use of language but also the memory for sentences and ideas in logical sequence. Learning to read by the conventional experience method used in the schools involves a memory factor which requires the ability to retain sentences and ideas. Since mentally retarded children are deficient in this function, greater emphasis should be placed on the training of memory than is ordinarily used with mentally normal children. Some suggested exercises which may train the memory factor are listed in the following:

1. Dramatization involves memory for certain phrases and sentences. Practice in such activities will aid the child later in learning to read. The teacher should keep in mind that mentally retarded children are deficient in ability to memorize and should not be given a complicated and complex play. She should begin with very simple dramatization activities involv-

ing short sentences. Gradually the sentences and statements may be increased but only as fast as the child is capable of learning them. Many plays have failed because they are too complex for mentally retarded children. Many plays have succeeded when the teacher has recognized this deficiency and has begun training with simple short sentences and simple thought units.

2. Exercises which involve the repetition of sentences of increasing complexity also aid the child in developing memory in connection with the use of sentences. These exercises need not be given formally in the way of drill but may be included in dramatization activities and in many other classroom activities. The teacher may, during the regular routine of the classroom, correct the child's shorter sentences. If the child comes to the teacher, for example, and says "Pencil" or "Gimme pencil," the teacher may say "Miss S., will you please give me a pencil," and have the child repeat the whole sentence. A little later the teacher may say to the child who makes the former request, "Miss S., will you give me a pencil because my lead has broken," or "because I want to draw." In that way the child will learn to repeat, and come to use longer and more complicated sentences.

3. Another exercise to be used in this connection and also to develop visual memory is to show the class a picture, remove it, and ask one of the children to describe the picture from memory. Other children can then fill in what the first child has missed. The teacher aids the class in formulating a longer sentence which the child repeats.

4. Memorizing poems and songs is good training for developing the memory for sentences and ideas. This training may be included in dramatization or music activities.

5. In many activities of the classroom, and in recreational activities particularly, the children may learn directions for

games and activities and give these directions to other children. In this way the children are training their memory for directions in logical sequence.

Developing Visual Memory and Visual Discrimination

Learning to read involves the process of visual memory, or remembering things previously seen, and visual discrimination, or seeing similarities and differences in words. Reading involves visual functions which are ordinarily not trained in kindergarten activities. It is imperative that the teacher of mentally retarded children make some attempt during the pre-reading period to develop this function so that the child will not be confused when he begins to read. Some activities which are designed to aid visual discrimination and visual memory are suggested in the following:

1. Select a series of animal pictures and present the child with the picture of four cats and one dog. Ask him to circle the picture of the animal that is different. Gray and Monroe¹ in *Before We Read* have worked out a series of exercises designed to train the child to detect the similarities and differences in pictures. Besides using animals and known objects, geometric designs may be utilized to train the detection of differences in visual symbols.
2. Point out likenesses and differences in objects in the room. Ask the children to discuss the similarities and differences between the desks or the chairs, for example. They will find that the desks may be of similar shape but of different size, or that one is movable and the other is not. Comparable pictures of different plants and animals offer tangible situations for the detection of similarities and differences. Discussing these also involves training of the language function, as well as memory for sentences and ideas.

¹ *Before We Read*, pp. 1-47.

3. Take one of two duplicate pictures and cut it up into various shapes. The children are to reconstruct the cut-up picture to correspond with the uncut or model picture. This exercise as well as jig-saw puzzles furnish seat work and aid visual discrimination.

4. Another activity which may aid visual discrimination is the collection of objects. If the children can collect leaves, for example, they may sort and put together the leaves that look alike. Animals, pictures, flowers, and vegetables (from pictures in seed catalogues), with words attached, also furnish interesting activities for the development of visual discrimination and memory.

5. Drawing activities and work in industrial arts and crafts furnish valuable pre-reading exercises for the development of visual discrimination.

6. Matching words and pictures, and playing with words and letters also tend to train visual discrimination. Activities such as these should come shortly before reading training begins.

7. Teaching children to recognize one another's names in writing by means of labels which are placed over their hat-racks and closets also aids visual discrimination and memory.

8. Place several objects on a table and hide them all with a screen while you cover some of them with a box. Remove the screen and ask the children to tell what objects are covered. The teacher may then increase the number of objects placed under the box, or she may increase the total number of objects on the table. If a child successfully names an increasing number of objects under a box his visual memory is improving.

9. Show the children a simple pattern, either a geometrical design or a simple picture. Remove the picture and ask the children to draw from memory what they have seen. If they

do not draw all the details, show them the picture again, ask what they have missed, and allow them to complete the picture or design. The complexity of the picture or pattern may be increased gradually.

10. Show the children a picture and then remove it. Ask them to enumerate the items in the picture.

11. Many games with shapes and colors can be used to develop visual memory. Various colored shapes, such as red circles, green triangles, blue squares, and other forms, may be pasted upon a cardboard. The teacher then displays a duplicate of one of the forms and asks the children to find the one like it on the cardboard. The complexity of visual discrimination can be increased by presenting the colors and forms in various ways. Since many mentally retarded children come to school without knowing the names of various colors, such exercises are valuable. Games and exercises such as enumerating all the green objects in the room, all the red objects in the room, and the like, are also valuable. Another game is to ask some members of the class to hold up various colored papers and then remove one. The class must tell which color was removed. Some teachers have instructed the children to make caps of different colors. Three or four of the children will don caps and stand in front of the room. Then the children will remove their caps, and the rest of the class will be asked to name the color of the cap each child wore. This game aids visual memory as well as color discrimination. To add to the complexity a greater number of children can stand in front of the class.

Auditory Memory and Discrimination

In addition to visual discrimination, learning to read requires auditory memory and discrimination, or remembering and discriminating between things heard. Many mentally

retarded children are deficient in auditory memory and auditory discrimination. This is exhibited in their forgetting directions given to them, in forgetting many statements made to them, in forgetting stories told to them, and in confusing similar statements and words. Since reading involves the auditory function through remembering things heard and making discriminations between similar things heard, it is important that the teacher of retarded children include this function in her pre-reading period. Some suggestions for developing auditory memory and discriminations are given in the following:

1. Blindfold a child and ask him to tell from what direction a sound is coming, or what child in the class made a certain noise, or what animal the child is attempting to imitate.
2. Give a series of words that rhyme with one word that does not. The children should tell the teacher what word does not rhyme in the series, such as cat, rat, fat, foot; or sit, hit, bin, bit.
3. Tap on the desk, on glass, on paper, on the blackboard, and on other objects in the room while the children are looking the other way. The children should then attempt to name the object that was tapped. A variation of this game can be introduced by permitting one of the children to tap on various objects which the other children are to identify. The child who first names the object will be the next one to do the tapping.
4. Blindfold one child and ask one of the other children to call out his name. The blindfolded child should attempt to identify the child who named him. Animal calls may be substituted for the name of the blindfolded child. The game of "blindfold-man" can be varied in a great number of ways to give the child ear training in the form of auditory memory and auditory discrimination. Distinguishing various noises, dis-

tinguishing and discriminating between different sounds, and so forth, furnish interesting games and constructive exercises for the development of auditory memory and discrimination.

5. Teach the children jingles and nursery rhymes within their comprehension. Jingles and nursery rhymes aid ear training.

6. Give the children a direction for the purpose of executing some act. Later give the children two directions, and then three, four, or five. The directions can be increased gradually and only as fast as the children can follow them successfully. In this way they will learn to keep in mind a series of directions.

7. Tell the children a short story and have them repeat it as closely as possible to the original. The length of the short story can be increased gradually, until the children learn to remember a sizeable sequence of sentences or ideas.

8. Tap on the desk with a pencil and ask the children how many times you have tapped. Start out with two or three taps alternated irregularly, and increase the taps to four, five, and six, or more. This exercise trains attention to auditory stimuli, and also increases the child's ability to remember what he hears.

9. A tune can be played with variations on several instruments. The children are to identify the tune. Also, singing games and similar exercises may be used for the development of the auditory function.

Correct Enunciation and Pronunciation

According to Ingram¹ twelve to thirteen per cent of mentally retarded children have speech defects as compared to two or three per cent found in the regular grade groups. Because of the poor language background of retarded children, inadequate

¹ CHRISTINE P. INGRAM, *Education of the Slow-Learning Child*, p. 21.

enunciation and pronunciation is common among them. Speech and reading, as integral parts of the language function, are intimately related. Monroe¹ found a relationship between difficulty in learning to read and speech defects. The teacher of backward children should devote time to correcting their enunciation and pronunciation. Suggested exercises and activities are given in the following:

1. The teacher should provide a good model for her pupils. She should take particular care to speak accurately at all times. Teachers with speech defects should not train retarded children. Furthermore, when errors are made by the children, the teacher should correct them immediately. She should not set aside a particular time in the day for speech training but should continually emphasize adequate enunciation and pronunciation in all of the school activities.
2. The teacher of the mentally retarded child should tabulate the articulatory errors made by the group as a whole. It will be found that in certain localities the words "this" and "that" are pronounced "dis" and "dat." By tabulating errors made by the majority of children in her class she can formulate methods of group training.
3. Some children have difficulty in saying certain words and require individual speech training. One child, for example, may say "tok" for "clock." The teacher should teach this child to say the word "clock" accurately.
4. Games that develop correct enunciation and pronunciation can be played in the classroom. Imitating words, or sounds made by animals and by machines such as "ch—ch," for train, offers adequate exercises in speech.
5. Learning and repeating rhymes and jingles accurately also aid speech training.

¹ MARION MONROE, *Children Who Cannot Read*, p. 99.

6. Choral speaking sometimes aids correct enunciation and pronunciation. This should be used only when the teacher can elicit an interest in such activity from the children.

7. Children with marked speech defects which cannot be corrected by the classroom teacher should be referred to a speech specialist.

Motor Ability

As stated in Chapter I the motor ability of mentally retarded children is only slightly inferior to that of the average child. Some subnormal children are even superior to some normal children in this respect. It is therefore not important for teachers of mentally retarded children to develop the motor ability of these children. Furthermore, motor ability can be developed without specific exercises during the regular course of classroom activities such as handwork, drawing, writing, and tracing. The teacher should, however, be on the lookout to develop oculo-motor co-ordination and left-to-right eye movements in reading. This should be developed in connection with reading itself and not by special exercises.

Visual Maturity

Betts¹ found that about fifty per cent of normal six-year-old children are farsighted. He advocates delaying reading activities for normal children until their eyes are more mature. Stone² states there should be no delay until normal children reach eight or nine years of age before the teaching of reading can begin. He claims that material should be adapted to the farsightedness of the children. This is being done by the use of chart material and larger type for first-grade children.

¹ EMMETT A. BETTS, *The Prevention and Correction of Reading Difficulties*, p. 154.

² CLARENCE R. STONE, *Better Primary Reading*, p. 215.



The problem of visual maturity in connection with reading is not the same with mentally retarded children as it is with normal six-year-old children. The mentally retarded child does not begin to read until he is eight or more years old. By that time his visual maturity has developed and he is no longer farsighted.

Dowling¹ studied the visual defects of 446 subnormal children at the Wayne County Training School and concluded that "visual findings of the subnormal individual run a very close parallel to that of the normal individual." From his findings we may conclude that for the higher-grade of mentally retarded children, the visual apparatus develops as it does in the mentally normal individual. Therefore the problem of visual maturity, which may be a problem for the average six-year-old child, is not a problem for the older mentally retarded child unless he has a visual defect.

Developing Eagerness to Read

The development of motivation in beginning reading requires a different technique for the mentally retarded child than it does for the normal child. The technique would not be different if mentally retarded children were given several years of pre-reading instruction. Then the children would be imbued with a desire for reading when they would be ready to learn to read. However, as was stated in Chapter II, most mentally retarded children begin school in the kindergarten or first grade and fail to learn to read for a number of years. They become discouraged through failure and dislike to attempt reading long before they are sufficiently mature mentally to learn to read.

¹ HARVEY E. DOWLING, "An Analysis of the Visual Findings in Subnormal Children," *American Association on Mental Deficiency* (May, 1936), pp. 168-172.

Dolch¹ lists the following motives for reading, usually used with normal children and obviously applicable to mentally retarded children:

1. *The story motive.* The children wish to learn to read so that they can enjoy interesting stories.

2. *The play motive.* Some children want to learn to read because reading is play for them. Deciphering words and ideas from a book becomes for them play in itself. The pleasure they derive in obtaining information from reading matter offers the motivation for reading further.

3. *The mastery motive.* Dolch states that some children want to learn to read because the achievement gives them a sense of mastery. They obtain pleasure in showing others how they read, and enjoy the approval and applause of their parents and teachers.

4. *The utility motive.* This motive is similar to the story motive previously discussed but includes the motivation of reading for practical information. The teacher instills in the children a desire to learn to read for their own protection and information. The children are taught to realize the advisability of recognizing "poison" labels. They may be stimulated to want to learn to read directions for making a model airplane.

5. *The please-the-teacher motive.* Although many teachers do not admit that children learn in order to please the teacher, this motive probably functions in school procedure. It is similar to the social approval motive, but is not recommended for use.

At the age of six, mentally retarded children cannot use the play motive; they are thwarted in the mastery motive; and they are even unable to please the teacher with their success. However, if reading can be delayed until the child is mentally

¹ EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, Chapter I.

mature and until the child has had pre-reading experiences, many of these motives listed by Dolch can begin to function. The mastery motive, for example, can be highly successful with children who have failed during their previous school career. It is imperative, then, that the teacher introduce reading only at a time when the child is ready to learn so that the child can master the materials and can succeed. Success in reading will serve as a powerful motivating factor to encourage maximum effort on the part of the child.

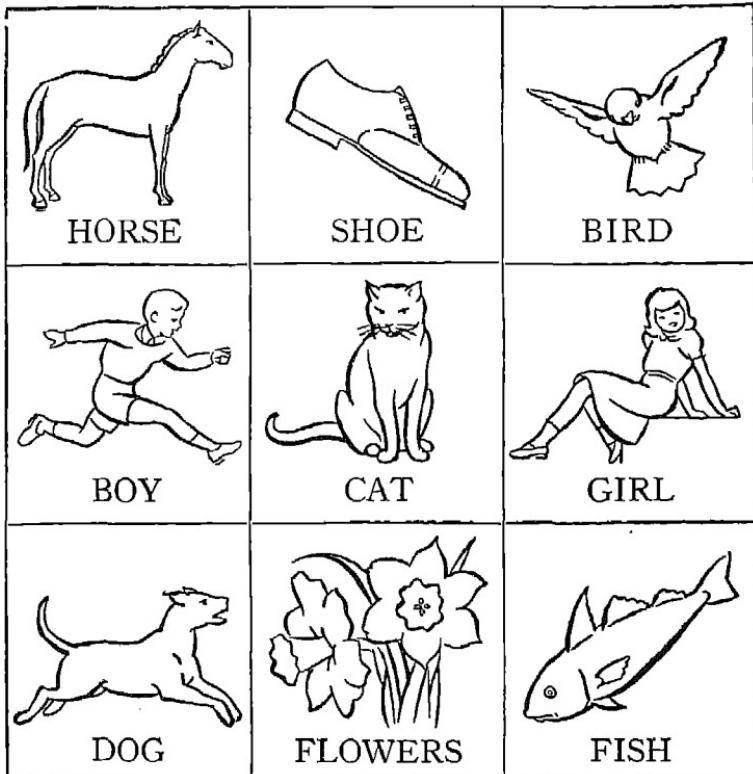
Present All Activities Gradually

Of prime importance in teaching is the transition from simple materials to more complex materials. This transition should take place in all activities, so that the child will succeed at every stage of his development. The following game illustrates the advantages of such a procedure.

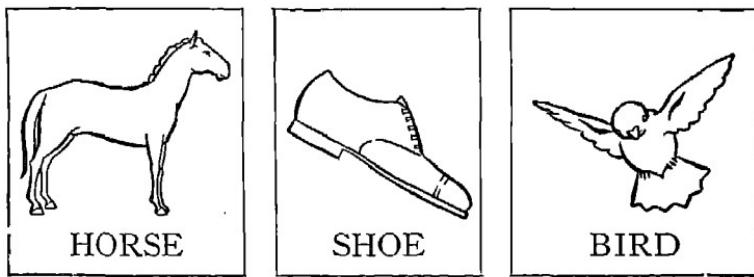
The teacher asks the children if they would like to play "Bingo." When they enthusiastically consent, she gives each child a card on which are pictures of nine familiar objects, as shown in Figure 2. Under each picture is written the name of the object, which, of course, the children do not recognize.

Procedure 1. The teacher cuts her card into nine smaller cards and presents them one at a time. When the picture of a shoe with the word *shoe* written under it is shown, each child looks at his card and places a bead on the picture of the shoe. This continues until beads are placed on all of the pictures. The children's and some of the teacher's cards are presented in Figure 2.

Procedure 2. In procedure 1 the children obviously matched their pictures with the teacher's picture without noting the word beneath it. In procedure 2, as shown in Figure 3, the teacher increases the complexity. She presents her cards showing the words without the pictures, thus requiring the chil-

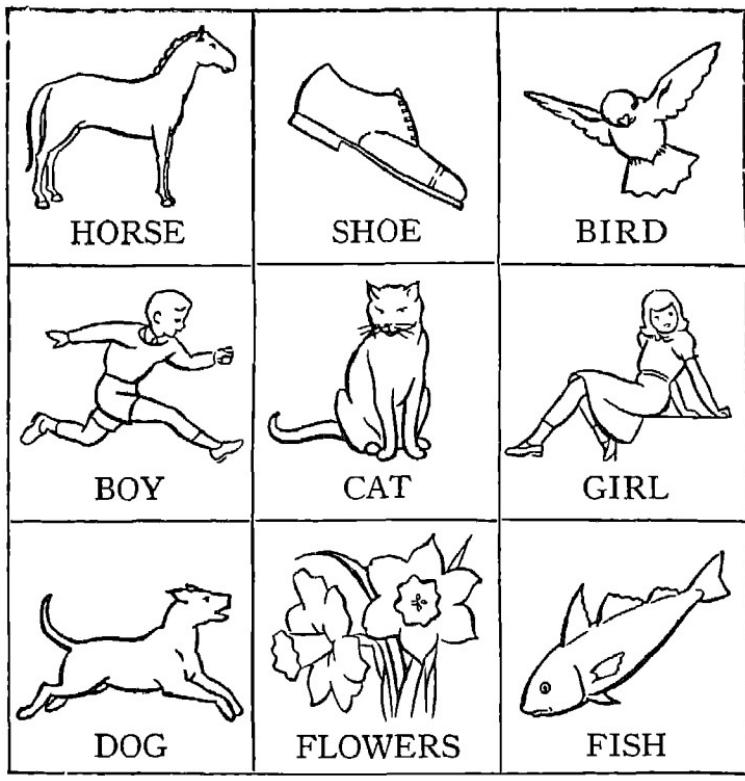


CHILD'S CARD



TEACHER'S CARDS

FIGURE 2. PROCEDURE I



CHILD'S CARD

HORSE

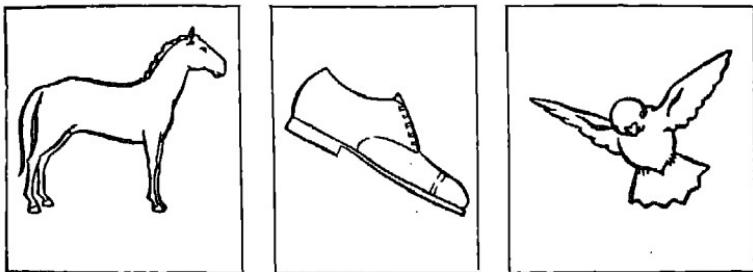
SHOE

BIRD

TEACHER'S CARDS

FIGURE 3. PROCEDURE 2

HORSE	SHOE	BIRD
BOY	CAT	GIRL
DOG	FLOWERS	FISH
CHILD'S CARD		



TEACHER'S CARDS

FIGURE 4. PROCEDURE 3

dren to match her word with their own words, at the same time associating the word *shoe* with the picture of the shoe.

Procedure 3. After procedure 1 and procedure 2 have been played for several days the teacher gives the children cards with the same nine words on them but without pictures, as shown in Figure 4. The teacher's cards consist of single pictures without the words. The children are required to identify the picture of a shoe, to find the word *shoe* among their own cards, and then to place a bead on the appropriate word.¹

The game described above demonstrates one method of transition. At first, the materials used are simple enough to guarantee success. Gradually, the materials are made more complex, but always within the learning capacity of the children. Activities should be presented to the mentally retarded child in this way to stimulate learning and an interest in school.

WHERE TO APPLY THE READING READINESS PROGRAM

The reading readiness program should be applied to all young mentally retarded children whether they are in kindergartens and first grades for normal children, or in special classes of various kinds. It may be well to discuss the procedure for teaching the mentally handicapped in each of these classes.

In Homogeneous Special Classes

In large school systems where mentally retarded children are segregated in special classes homogeneous grouping is usually found. Young mentally retarded children having mental ages

¹ A description of a similar game called "Read-o," presented auditorially rather than visually, is found in Lester R. Wheeler, *Journal of Educational Research* (January, 1938), pp. 335-345.

of four to six are placed in one class. If most of the children fall in the classification of non-readers and require a reading readiness program, the teacher will need no special suggestions in order to follow the program outlined in this chapter. The procedure, unlike that for the kindergarten for normal children, would place less emphasis on gross motor activities and greater emphasis on the functions in which the children are deficient. Through such a program the children will develop reading readiness and will be capable of learning to read when a reading program is introduced.

In Ungraded Classes

In smaller school systems where there are fewer mentally retarded children, ungraded classes are usually found. One school may have a sufficient number of mentally retarded children of all ages to form only one ungraded classroom. This group of children of heterogeneous ages may be called the ungraded special class.

In such a class there are usually five or six children who have not learned to read and who are not psychologically, socially, or emotionally ready to learn to read. The other children may be beginning readers or more advanced readers. Such a class usually has an enrollment much smaller than that of the regular class, thus permitting more individual instruction.

So that she may apply the reading readiness program to the small group of children who require it, the teacher should study the entire class to determine which children require a reading readiness program, which ones a beginning reading program, advanced reading, or remedial reading instruction. For the group that requires the reading readiness program an organization similar to the one described on pages 40 to 41 may be used. If the teacher understands the needs of the children, she can utilize many of the activities of the classroom to train them in

reading aptitudes. In addition, these children may have a recitation period of one-half hour a day for the reading readiness program while the rest of the class is engaged in other work. Similarly the beginning reading and advanced reading groups may have their periods of recitation. If the teacher is skilled in her approach the children will soon become accustomed to being divided into groups under her direct supervision.

In the Modified Special Class

In some school systems a modified form of the special class is used. Five to ten children who are mentally retarded and dull are placed in one of the first grades with a teacher who has also children of normal mentality. Thus the class will consist of dull and retarded children as well as normal children. Usually the enrollment in this class is reduced slightly so that the teacher can give more individual attention to the slow learners.

The program of reading readiness for the children in this first grade may be conducted in the same manner as in the ungraded special class. Certain normal children may be grouped with subnormal children for reading readiness activities. Language ability, visual memory and discrimination, and other functions can be developed through this organization in all children who need it. As with the teacher of an ungraded special class, the teacher of a modified special class at the first-grade level will have some children who are not ready for beginning reading and others who are beginning readers. Three or four groupings are usually made in the classroom with these children for recitation purposes. In this way the reading readiness program outlined in this chapter may be administered to the group of children who need this type of instruction.

In the Regular Kindergarten

The program of the kindergarten aims to socialize the normal child and to prepare him for future school activities. A part of the kindergarten program is devoted to the development of reading readiness.

In many school systems intelligence tests and reading readiness tests are given to all kindergarten children at the end of their fifth year, or before they are admitted into the first grade. Some of these children, especially the dull-normals and the mentally retarded, are found to be too immature to enter the first grade. They are compelled to repeat the kindergarten program, this time with the new class of five-year-old children.

These children who are not admitted into the first grade should be given an intensive reading readiness program. Since they are older than the five-year-old children, and since they have become accustomed to the teacher and the classroom, they can surpass the newcomers in many activities. Language development may be carried on by giving these retarded children opportunities to tell the other children of their accomplishments, or to tell about their previous experiences. Directions for games and activities to develop reading readiness may be carried out with this small group in the manner outlined earlier in this chapter.

In these activities the teacher should remember the differences in learning abilities between normal and mentally retarded children. Normal children pick up, learn, and develop many of the functions incidentally. Maturation and the natural activities of the normal child seem to take care of the functions necessary for learning to read. With mentally retarded children and even with some mentally normal children more guidance and many more repetitions are necessary. For these reasons children who are held back in the kindergarten should be allowed to develop the functions necessary

for reading. This can be done if the kindergarten teacher has the functions in mind and is capable of utilizing every opportunity to develop them. Most of the activities listed in this chapter can be applied to a kindergarten situation.

In the Regular Primary Grades

Most of the children admitted to the first grade are ready to learn to read. But many dull children enter the first and even the second grade before they are ready to learn to read. The dull-normals, some of the normals, and practically all of the mentally retarded children are not ready to learn to read at the age of six.

In any typical first grade there are three or four groupings of children for recitation purposes. The highest group consists of those who can read books; the lowest group consists of the children who are not yet ready to read. The latter group usually includes those who require further training in reading readiness before reading is begun. In this group also are usually found some normal, dull-normal, and mentally retarded children.

To carry on a reading readiness program for this group the teacher must first study the children to discover their needs. When the children have been selected for this type of program, they may be given the program here outlined during the recitation period in the same way as the more advanced children are given their program. An intensive reading readiness curriculum will do much for these children who are by this means spared the discouraging experience of trailing behind the others in reading activities.

SUMMARY

To prepare a mentally retarded child for reading, certain related activities should be developed. Some of these activities and functions are suggested below:

Delay reading until a mental age of at least six is attained or until the child shows signs of an aptitude for learning to read. This will avoid failure and the discouragement which inevitably results from prolonged inability in learning to read.

Develop adequate use of the English language so that when the child begins to read he will understand the reading matter. Learning is greatly facilitated if the child reads meaningful material.

Develop the ability in the child to remember sentences and ideas in logical sequence. Reading involves thinking, and remembering sentences and ideas previously read.

Develop visual memory and visual discrimination. Learning to read involves remembering things seen, and the ability to discriminate between similar visual symbols.

Develop auditory memory and auditory discrimination. Learning to read involves remembering words and ideas heard as well as the ability to discriminate between similar auditory symbols.

Develop correct enunciation and pronunciation. Learning to read is related to the ability to speak accurately.

The motor ability of mentally retarded children whose mental age is six is superior to that of the average child of six years. Hence, for this function no special instruction beyond that of the regular school activities need be used for reading readiness with mentally retarded children.

The visual maturity of mentally retarded children at the mental age of six is superior to the visual maturity of six-year-old mentally normal children.

Establish eagerness to learn to read in mentally retarded children by showing them success in reading. This can be done if beginning reading is delayed until sufficient mental maturity has been attained and if adequate pre-reading instruction has been given.

Present all learning activities gradually; that is, begin with simple material with which the children can succeed and proceed slowly to more complex materials only as fast as the children can learn.

A reading readiness program should be given to young slow-learning children whether they are in a homogeneous special class, an ungraded special class, a modified special class, the kindergarten, or the primary grades of the regular school.

CHAPTER IV

Instruction in the Initial Stages of Reading

THE PROCESS OF READING

DURING THE earlier days of education in the United States a piece-meal method of teaching reading was utilized. Children first learned the alphabet and then learned to read by spelling words. This was a slow and laborious process and was soon discontinued for the phonic method, which was an improvement over the alphabet method. Through the use of phonics children were able to decipher words and thus they learned to read. Later it was observed that children could learn words as wholes without learning either the alphabet or phonics. It was also observed that during the initial stages of reading children could learn even simple phrases and sentences without knowing word elements or individual words.

On the basis of research studies reading methods have been evolved which teach the children sentences and thought units during beginning reading. This method has revolutionized the teaching of beginning reading because it fits into modern psychological knowledge and is much more interesting to young children.

The Gestalt psychologists have informed us that children perceive wholes first and learn details later. In other words the child's first impression of a written symbol is perceived as a

whole. Studies in psychology, biology, and reading indicate that the process of reading may now be explained as follows:

First Stage — Reading Wholes

When the child is first presented with a short sentence or phrase which is based on his experience he probably learns the whole sentence, partly by memory, and partly by recognizing the configuration of the sentence.

Here is an example of teaching beginning reading. A teacher asked a child what pet he had at home, and continued to question him for further information. The child gave the following statements which were written on the board and read by him:

I have a dog.
His name is Tom.
He can run.
He can jump.
He can play.

The child was capable of reading the whole paragraph through memory of what he had said, and through the recognition of the configuration of the sentences. *In other words, the child's first impression is whole sentences and only vague blocks and gaps between words.* He does not necessarily recognize or perceive the separate words in his story.

Second Stage — Learning Details

Although the method of utilizing vague impressions is valuable in beginning reading, children cannot learn to read and progress merely by seeing vague phrases and sentences and making some differentiation between them. To progress in reading they must go into the second stage in the reading process which is the learning of the details of the sentences and words.

It is true that many superior and average children need little instruction in learning the details since during the process of reading sentences they learn to discriminate between different words. Many children, however, require aid and teachers of primary reading attempt to guide the process of going from wholes to details by a specific method. Learning to discriminate the word *dog* from the word *beautiful* is simple enough, but learning to discriminate the word *dog* from the word *boy* is more difficult. To accomplish this the child must recognize that *d* is different from *b*, that the *o* in both words is similar, and that the *y* is different from the *g*. In other words, learning to differentiate the word *boy* from the word *dog* requires a discrimination of the individual parts or items in the words.

It appears, then, that the child learns the sentence as a whole, and that to progress in reading he must learn the individual words in the sentence. Learning the individual words requires the learning of the different elements in each word. This does not mean that the child must be taught the various letters or different sounds in each word, but he must be able to make these discriminations perceptually even though he does not know the names of the individual letters or sounds.

This concept of learning wholes and then details becomes clearer if we take an example from adult behavior. If an adult were shown two similar leaves the first impression would be of the leaves as wholes, rather than of the differentiating characteristics. When he is shown the leaves again, he may be able to differentiate or to recognize that the first leaf is from the red oak tree and the second from the white oak tree. If he has been told their names he may be able to discriminate between them. Further to facilitate his recognition of the two leaves he may be told, "This is a red oak leaf because of certain characteristics which differ from those of the white oak leaf."

In other words, adults perceive wholes during the first impression and gradually discern details as they become acquainted with their perceptual object.

There is an analogy between the adult's ability to discern objects and the child's ability to learn to read. The child sees whole words, and to make finer discriminations he must learn the details. Many children, especially those of superior intelligence, learn these finer differences without specific instruction. Many average, and most retarded, children, however, require aid in making the discrimination. Hence, these children must be instructed in word study and phonic analysis. Many children fail to learn to read because their teachers do not recognize that at a particular stage in their reading development these children have failed to perceive details.

Third Stage — Reading Without Awareness of Details

The third stage in the reading process is the reading of thought units without being aware of the details. In the process of reading the child absorbs only thought units without being conscious of the details of the printed page. Psychologists call this process "cue reduction." For example, the driver of a car is at first conscious of his brake, clutch, and gear shift. As he practices driving, these skills become short-circuited and are done automatically. This process of "cue reduction" in driving a car operates similarly in the process of reading.

Since advanced readers are unaware of details in reading there are teachers who believe it is unnecessary to teach details. Consequently they stress the "whole" method of teaching reading throughout the training period. Many children learn to read in spite of this method since they are capable of learning details without specific instruction. Other children develop reading disabilities because the teacher allows them to

omit an essential process in reading. It is imperative that the teacher instruct the children in details of sentences and words and then use methods which will aid the child to read without attending to, or being aware of, the details. In this way the child will arrive at the ultimate aim of reading; that is, reading thought units and ideas without being conscious of the process.

To summarize these three stages of reading, it may be said that the alphabet and phonic methods at the beginning of reading are psychologically unsound since the child at first is perceiving gross configurations. After he has had experience in reading short sentences and paragraphs, he should be aided in observing details through the use of word study. After he has had further experience with details, larger thought units can be introduced so that the child, through the process of "cue reduction," can read without noting the details of words and sentences, yet can fall back on them if necessary. The teacher who is able to recognize these three stages of reading can formulate her method to fit into the process of reading at each particular stage.

With most average and superior children the so-called "whole" method of teaching reading is adequate as these children gradually learn the details during reading without aid from the teacher. Some children, however, do not learn to read by themselves and become cases of reading disabilities.

Since mentally retarded children are deficient in making inferences, in learning by themselves, and in using "cue reduction," they must be aided in these processes at each stage of their development. The teacher of backward children therefore has a more difficult task than the teacher of mentally normal children. She must be alert to detect the stage at which the child is reading and she must intensify the instruc-

tion to aid the retarded child in some of the steps that the average child learns without instruction.¹

METHODS OF INSTRUCTION IN BEGINNING READING

Methods of teaching beginning reading fall into several categories, (1) the natural method, (2) the incidental method, and (3) the systematic experience method. These three methods will be discussed below:

The Natural or Activity Method

The natural or activity method of teaching reading has been proposed since some children learn to read without instruction. Terman² states that forty-five per cent of the gifted children that he studied had learned to read at home, without any specific instruction, before they came to school. These facts have encouraged a natural method of teaching reading. This method consists of supplying the children with an interesting reading environment and allowing them to learn by themselves whenever they are ready to learn.

Gates has made a study of children who learned to read by the natural or incidental method. He concluded:

This somewhat informal analysis of the achievements of 130 pupils left entirely or almost entirely to their own devices has shown that pupils ranging from fair to distinctly superior intelligence, frequently fail to develop satisfactory techniques of word analysis and recognition. Among the pupils studied, approximately one out of four was so ill equipped as to fall short of satisfactory progress in developing a reading vocabulary. Many were

¹ For a more detailed description of the process of reading, see EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, Chapter II.

² LEWIS M. TERMAN and BARBARA S. BURKS, "The Gifted Child," *Handbook of Child Psychology*, second edition, p. 781.

clumsy and inaccurate in word perception and were prone to distort the material read, especially when it became difficult. Although many others became good or even excellent readers, their techniques in word recognition were rarely excellent. Relatively few had acquired skill in dividing unfamiliar words into syllables or phonograms, in perceiving the elements common to many words, or in taking advantage of the phonetic conventions of the language. It is highly probable, therefore, that the most successful of these pupils would have realized greater attainments had they been provided with some kind of tuition.¹

Stone, in discussing the natural method, states:

Project activities involving pupil purposing, planning, co-operating, and creating are an invaluable part of primary education. Nevertheless, the theory that all the reading activities must be related to, and grow out of, these activities is psychologically unsound, unduly restricts the program in reading, and in practice fails to provide adequately for the instructional needs of many children. Incidental, correlated, and integrated reading has distinct and unique values, but it should parallel rather than supplant a systematic and sequential plan in beginning reading.²

These evaluations and criticisms of the natural or activity method which propose to train children without any systematic presentation of materials could be emphasized in the teaching of mentally retarded children. Incidental learning and activity projects have a definite place in the education of the mentally retarded child although it will be more difficult for the child to learn to read by the natural method or by the incidental method alone. More planning and systematic training will have to be given to retarded children if the maxi-

¹ A. I. GATES, *New Methods in Primary Reading*, p. 30. By permission of Teachers College, Columbia University, publishers.

² CLARENCE R. STONE, "The Current-Experience Method in Beginning Reading," *Elementary School Journal* (October, 1935), p. 109. By permission of the publishers.

mum efficiency in the teaching of reading is to result. This does not mean that stilted formal instruction of reading must be introduced in the special class, but the teachers will have to proceed systematically.

The Incidental Method

The incidental method is related to the "natural method" of teaching reading. It presents reading materials only in connection with familiar activities. It connects reading with the immediate life situation of the child. This method, like the "natural method," has its limitations. Learning to read only the material which is introduced in an activity may be achieved rapidly because of its meaningful nature but it does not help the child to read new materials. With subnormal children the incidental method may be used as a supplement to other reading instruction. Methods of introducing incidental learning will be given later.

The Systematic Experience Method of Teaching Reading

The systematic experience method of teaching reading is the most commonly used in schools. It utilizes the experience and vocabulary of the child in teaching him to read. Since words familiar to the child are used by this method, it becomes meaningful and therefore facilitates learning. An example of this method may be cited.

A teacher took her primary class to visit a small farm in the neighborhood of the school. The next day when the children came to class the teacher asked, "Where did we go yesterday?" The children answered, "We went to the farm." Then the teacher asked, "And what did we see?" The children began to relate their experiences by saying, "We saw a dog. We saw a cow. We saw a horse." The teacher proceeded to write

these sentences on the board as the children related their experiences. She explained that she was going to show them a new method of telling the stories. The following paragraph was written on the board:

We went to the farm.
We saw a dog.
We saw a cow.
We saw a horse.

The children read these sentences, which were directly related to their immediate experience. The next day the teacher wrote the sentences on a chart and the children read them again, in the new setting. In this way the children were introduced to reading by utilizing their own vocabulary based on their immediate experiences. After reading many similar stories, and acquiring a sight vocabulary, the children were presented with primers and first readers.

LEVELS OF READING FOR MENTALLY RETARDED CHILDREN

Mentally retarded children vary in degree of mental retardation. Before instituting a program for the teaching of reading the teacher should attempt to discover what level of attainment each child will probably reach. Retarded children with varying degrees of intelligence reach differing levels of performance in reading and should not be pressed to go farther than their capabilities warrant. These levels of performance have been listed by Martens¹ as (1) reading for protection, (2) reading for information or instruction, and (3) reading for pleasure.

¹ *Op. cit.*, p. 61.

Reading for Protection

Some children can learn to read only simple words and phrases. If a child's IQ is below 50, it would be futile to attempt the attainment of higher efficiency in reading. The aim of reading instruction for these children should be to teach them to read certain signs for their own protection and information. Words and phrases such as the following may be the limit of reading training for the imbecile child:

BE CAREFUL	BUS STATION
INFLAMMABLE	NO TRESPASSING
DANGER	POISON
DOCTOR	PRIVATE
ENTRANCE	RAILROAD CROSSING
EXIT	SLOW
EXPLOSIVES	SCHOOL
DYNAMITE	WET PAINT
FIRE ESCAPE	KEEP OFF
GO	MEN
STOP	WOMEN
HELP WANTED	POLICE
FIRE	

Reading for Information or Instruction

Most retarded children with an IQ of 50 or higher can learn to read for information or instruction. They should be able to learn to look up names in a telephone book, to read official signs and warnings, to read time tables, directions, and some sections of the newspaper.

Reading for Pleasure

Many of the higher grades of mentally retarded and borderline children can learn to read for pleasure. The teacher should aim to achieve this for the higher types of retarded children.

SPECIFIC DIRECTIONS FOR INSTRUCTION IN THE
INITIAL STAGES OF READING

In the last chapter it was indicated that the teaching of beginning reading to a nine- or ten-year-old child who has failed to learn to read during his previous school career is a different problem from the teaching of reading to a six-year-old mentally normal child who has not been faced with school failures. By the time the mentally retarded child is ready to learn to read, he has already become discouraged, and in many cases has developed defense mechanisms toward school work. To teach a retarded child to read the teacher must (1) re-establish confidence, (2) introduce a great deal more repetition than is ordinarily employed with normal children, (3) introduce a greater variety of presentations, and (4) prolong the period of training for each stage of reading.

After the backward child has been given pre-reading experiences in the manner outlined in Chapter III, the teacher should determine whether the child is ready to read and whether he can profit from instruction in reading. This may be determined by the child's mental level and by his ability in learning some of the incidental reading materials presented during the pre-reading period.

Two simultaneous methods used in teaching beginning reading will be described below. These will be described under (1) the incidental method, and (2) the systematic experience method.

The Incidental Method

The incidental method of teaching reading refers to the presentation of words and phrases in connection with the immediate experiences of the child. With mentally retarded children the incidental method can be used beneficially in de-

termining readiness for reading at the close of the pre-reading period, and as a supplement to the systematic reading period. The incidental method alone will not teach mentally retarded children to read. It should be used only as an aid to a more systematic method.

During the course of pre-reading activities the teacher should occasionally introduce written words and phrases in connection with the child's activity at the moment. When she discovers that some of the children are beginning to learn these words and are capable of reading them she knows that they are about ready to learn to read regardless of their mental age.

During the course in beginning reading, and even thereafter, a great deal of learning can be absorbed by incidental reading of signs, labels, bulletin boards, and other methods listed below.

(1) *The Use of Bulletin Boards.* A bulletin board should be utilized for incidental reading. The names of children and simple directions for their participation in activities can be written on this bulletin board. For example, if Tom, Bill, and Mary are selected to perform a particular task, the teacher writes the names of Tom, Bill, and Mary, and their duties on the bulletin board. In this way they will learn to recognize their names and possibly some words and phrases. At a later stage the bulletin board may be used for news items and for various directions.

(2) *Labels.* Labels may be used during the pre-reading period as well as during beginning reading. The word *chair* can be written and hung on a chair. The table, hatrack, desk, and so forth, may be used to give the child a concrete example of the symbol. Removing the labels, and allowing the children to replace them on the proper objects is another game that can be used for incidental teaching.

(3) *Pictures.* Pictures of animals or children, labeled appropriately, may be hung on the walls. Pictures serve a val-

uable purpose in incidental reading and may be used with words, phrases, or sentences.

(4) *Assignments.* During beginning reading certain assignments may be given the children outside of the reading period. If the children are about to engage in handwork, the teacher may discuss what each child is going to do, and may write on the board the direction, such as, "Sally will sew a dress for her doll," or "John will draw a picture."

(5) *Greetings.* Greetings and other statements by the teacher may occasionally be written on the board in place of the oral expression. When the children come into the school room in the morning, the teacher may write on the board "Good morning" and ask the children whether any of them know what has been written. It can be alternated later with "Good morning, boys," and "Good morning, girls."

(6) *Rules.* Certain rules of health, co-operation, or of the classroom activities may be discussed and written on cards to be posted around the classroom. "Our teeth are clean," "Our hands are clean," "We are quiet in class," and similar statements may be used for incidental reading. These cards should be changed frequently as the children learn them. Such methods may be used during the latter part of the pre-reading period and during the beginning reading period.

The Systematic Experience Method

The method of teaching reading to mentally retarded children should follow the conventional experience method but with greater variation and more repetition. A systematic plan will be discussed to aid the teacher in the use of the techniques of this method. The teacher must remember that all children do not react alike, and she should use the method that will work best with her children. For example, one teacher was confronted with the following situation, when she attempted

to introduce a paragraph of chart reading to a boy who had attended school for a number of years and had not learned to read. When the boy, whose mental age was six, saw the chart, he retorted, "That's baby stuff. I had that in the first grade. I want to read books like the older boys."

It was useless for the teacher to present the material in the order presented here. Instead she had to vary the beginning reading materials in such ways that the boy was unable to recognize them as the same he had been accustomed to in the first grade.

The method of teaching beginning reading to mentally retarded children will be given in the order that is most frequently used. It may be varied by the teacher to suit the needs and abilities of the children.

Step 1. The teacher of mentally retarded children should first be sure that the children are ready to read. They must be sufficiently mature mentally; they should have acquired a vocabulary and other abilities listed in Chapter III. The most important requirement is that the children have a desire to read.

Step 2. On the basis of their immediate experiences the children should be stimulated to tell a story. If they had been to a farm the previous day, they might describe their experiences, as in an earlier example, in this way:

We went to a farm.
We saw a dog.
We saw a cow.
We saw a horse.

The teacher writes these sentences on the board as the children relate their experiences. Manuscript writing, rather than cursive writing, is used since it is easier to write, is more uniform, and is more like the printed materials. The children then read the sentences. These may be left on the board

until the next day when the children may be asked to reread the sentences before formulating others about a different experience.

In formulating these paragraphs the teacher should keep in mind a number of principles. The stories should contain short sentences. The sentences should be derived from the children's immediate experiences. The paragraphs, at the beginning of training, should contain only three or four sentences. Later, the length of each sentence and of the paragraph may be increased. Furthermore, the teacher should introduce words that will appear later in book reading.

Step 3. The paragraph that was written on the board should on the following day be written in manuscript form or with a printing set on a chart. The children should then be asked to read this material from the chart. In this way the children read the same material in a different setting. The charts are read aloud by several or all of the children.

At this stage of the reading process the children are reading the chart paragraphs partly from memory and partly on the basis of the configuration of each sentence and the paragraph. They see vague wholes, rather than words or letters in words. They are perceiving wholes and are in the first stage of the reading process.

Step 4. On succeeding days, new paragraphs should be written on the board. These paragraphs should utilize the immediate experiences of the children, and should contain relatively few new words. The stories should also be put on charts in the same manner as before. The chart materials may be made in the form of a large book, so that the children can read progressively as they turn the pages of stories which they have experienced, and which they have aided in constructing.

Step 5. For normal children the first four steps in beginning reading are usually sufficient to teach the children a sight

vocabulary. Many teachers of normal children utilize the method given above for the first six or ten weeks of the first grade and then introduce pre-primers and primers. Many other presentations, however, should be given the slower learning mentally handicapped child. The teacher of mentally retarded children must continue the introductory reading experiences and go far beyond the point where she could stop for normal children. The following devices and methods of presenting the same materials are recommended so that repetitions of words and sentences may be given in a variety of settings.

a. The "moving-picture" method can either take the place of the chart method or supplement it. Some children object to chart reading because it is "baby stuff" and because they have had it in past years.

The "moving-picture" method is a device for the presentation of reading materials in a novel and interesting fashion. It consists of the construction of a large box, about the size of reading charts, with a roller at each end. A roll of reading materials may be placed on one roller and the end attached to the second roller. With a crank attached to the second roller, the teacher or a child may turn the crank until the first story appears. The children can then read the story, turn the crank, and read the next one. It is highly motivating because it has the appearance of a show. It is effective because it presents chart and board reading materials in a different setting.

One teacher utilized the "moving-picture" method as follows: She asked a boy if he had a pet at home. Under repeated questioning he related the following story:

I have a dog.
His name is Jip.
He can play.
He can run.
He can jump.

The teacher wrote this story on the board, and had the children read it; she then wrote it on a chart with a light pencil. The boy filled out the penciled marks of the teacher so that he would be able to see the writing at a distance. He used a black crayon to color the letters which formed the words and pasted a picture of a dog at the top of the page.

A little girl in class gave the following story:

I have a little brother.
His name is Tom.
He can play.
He can run.
He can jump.

This story was written on a chart by the teacher and the girl was asked to fill out the words.

Other children in the class wrote or helped write little stories of their own. These charts were then pasted on a long piece of heavy paper and were placed over one of the rolls of the "moving-picture" box. One child in class turned the crank until the first paragraph appeared. The teacher would then say, "Whose story is that?" The boy who helped write this story and who had pasted a picture of a dog on it read the story. The little girl also read her story, and the other children read theirs. Later the children read one another's stories. Preparing the charts for the "moving picture" for the third reading gives the child greater familiarity with words and sentences, since he must trace the words and sentences, color them, or mark them as he wishes before they are placed on the reel. These activities become interesting and purposeful for the mentally retarded child.

b. Mimeographing the stories for the purpose of further repetition also aids the fixation of words and phrases. The same stories that were used on charts and in the "moving picture" may be mimeographed by the teacher and given to the chil-

dren for reading purposes. This presents the material in a new setting, although it utilizes the same materials again.

As a further incentive to reading the mimeographed sheets, the children may use them to make reading books. Each child makes his own book of stories. He may read and illustrate these by drawing or pasting pictures on the mimeographed sheets. Binding the books and keeping them as a permanent record to read at various times, or to take home and read to their parents, also stimulates the reading interest of the children.

Since pre-primers and primers may not be interesting to older mentally retarded children, many mimeographed booklets will have to be given to the children during their period of beginning reading. In addition to mimeographing the stories that the children have read on the board, on charts, or in the "moving picture," the teacher of mentally retarded children may make up stories which are interesting to the children, and which are within their abilities. In this way the negative attitude of the older children toward pre-primers and primers, usually referred to by the children as "baby books," can be eliminated. At the same time much reading material may be presented.

c. Another variation that may be used to advantage is the lantern slide or stereopticon technique. With the use of the projection lantern the teacher may print on slides the stories which have been read from the charts or the "moving-picture" box. These slides may be placed in a projection machine and flashed on a white wall. This presentation, because of its novelty, motivates the children to reread the materials. This technique aids many of the distractible children to pay attention to the reading materials. Whenever children begin to show disinterest in chart reading, or in mimeographed stories, the teacher should immediately vary the method of presenta-

tion. The stereopticon is only another method of presenting reading materials for the purpose of maintaining attention and interest.

Step 6. After the children have acquired a sight vocabulary through reading stories of their own experiences, the teacher should aid the children to become aware of details by instructing them how to learn to recognize individual words. This is the second stage in the reading process and may be facilitated by the use of a variety of methods. Some of these devices and methods are as follows:

a. When the children read a story from the board, or from the "moving picture," or the mimeographed sheets, the teacher may ask them to point out individual words. In this way the children are introduced to learning the individual words in a story.

b. Cut the chart into sentences and ask the children to reconstruct the story by placing the sentences in order. In this way the children will begin to learn differences in larger units. After they have reconstructed a number of charts and a number of cut-up mimeographed sheets at their seats, they may go on to a second step in learning details.

c. An effective method of making differentiations between different words is to cut the chart into sentences first and then to cut the sentences into words. A rack should be built by the teacher so that the children may take a series of words and reconstruct a sentence from them. At first it may be necessary for the child to have a model of the original sentence for reference. Later, reconstructing the sentence without the original model should be encouraged. Phonetic analysis need not be introduced at this stage unless it is introduced incidentally and intrinsically.

The methods given above are more intense and introduce more repetition than those usually used with the normal child.

With normal children it is sufficient to ask them to find a specific word on a chart. With the mentally retarded child, however, the teacher must introduce a great variety of presentations utilizing the same materials repeatedly in many settings.

THE DURATION OF THE BEGINNING READING PERIOD

For children of average or above average mentality the chart reading period is usually covered in the first six to twelve weeks of the first grade. In this period many charts and stories are read. The children will have acquired a sight vocabulary of one hundred or more words before pre-primers and primers are given to them.

For the mentally backward child whose mental age is six or more, the beginning reading period requires more than six to twelve weeks. If the teacher of retarded children spends at least one semester to one year with beginning reading materials before introducing books, the time is well spent. In this way the backward child gains confidence in reading. After a prolonged chart reading period, the children find that books are not too difficult for them. In this way discouragement may be avoided.

THE USE OF BOOKS

The teaching of reading to mentally retarded children through the use of books designed for the average child presents a difficult problem. Many mentally retarded children resent being given the ordinary pre-primers and primers, especially if they have had previous experience with these books. They feel that they are much too old for such "baby books."

Another handicap of many of the ordinary pre-primers and primers is the vocabulary content. The introduction of too

many new words imposes a heavy burden on the mentally retarded child. This factor might well account for the mentally retarded child's failure and disinterest in learning to read. Gates¹ made an investigation of vocabulary burdens for different intelligence levels, and found that the typical primary reader introduces new words at rates varying from one in ten up to one in seventeen running words. His investigation shows that learning new words at these rates without any supplementary work is difficult even for bright pupils. Table 11 presents Gates's estimate of a reasonable vocabulary burden for various intelligence levels.

TABLE 11. GATES'S ESTIMATE OF THE VOCABULARY BURDEN FOR VARYING INTELLIGENCE LEVELS²

Range of IQ (chronological ages between 6.1 and 7.5 yrs. at beginning of term)	Number of repetitions to be provided in reading course, aside from all incidental reading
120-12	20
110-119	30
100-109	35
80- 89	40
70- 79	45
60- 69	55

Gates's table emphasizes the importance of building vocabulary for the backward child by the use of the repetition of words. The repetition should occur preferably in different settings.

To this end, mimeographed stories which utilize words occurring in first readers or simple books may be used, but over a much longer period than is usually devoted to their use with normal children. The teacher may write stories which include pre-primer and primer vocabulary but which have a more mature outlook and are presented in a different setting. Some

¹ ARTHUR I. GATES, *Interest and Ability in Reading*, p. 35.

² *Ibid.*, p. 35. By permission of The Macmillan Company, publishers.

children enjoy reading primers and pre-primers. In such cases it is permissible to introduce a pre-primer or primer after the child has acquired some sight vocabulary. In introducing books and reading materials for mentally retarded children, the teacher should keep in mind the following points:

1. Continue chart reading, "moving-picture" reading, and the use of cut-up charts and sentences, mimeographed stories, and the projection lantern even after book reading has begun. The words used in these "stories" should include the unfamiliar words that are going to be presented in the book material. In this way book reading becomes easier and more pleasurable.
2. Stress accuracy rather than speed with mentally retarded children. These children tend to continue to repeat their mistakes. It is better, therefore, to teach them the correct response first than to correct errors later.
3. When book reading has been introduced find a variety of books of simple materials. Allow the children to read many of these books. Even with normal children it is good practice to have them read several primers and pre-primers before introducing the first-grade reader. With mentally retarded children many such simple books should be read.

Many authors of primary books are now supplementing the regular readers with pamphlets which include the same vocabulary as the reader, but which introduce a new story of the same level for children who need such repetition. Among such pamphlets is one entitled *More Dick and Jane Stories*,¹ which supplements a Basic Pre-Primer. This supplementary pre-primer presents eighty different words, sixty-eight of which have been introduced in the Basic Pre-Primer. Marjorie

¹ W. H. ELSON and W. S. GRAY, *More Dick and Jane Stories*, Scott, Foresman and Company, pp. 1-48.

Hardy has supplemented *The New Wag and Puff*, with *Surprise Stories*¹ which give more stories about Wag and Puff.

In *The New Work-Play Books*² by Gates, Huber, and Pardon, the basal readers are supplemented by optional readers. One book, *The Surprise Box*, covers the first unit of the primer, *Jim and Judy*. The authors have written similar supplementary books for each unit of the basal reader. These books and many others which are being printed by many publishers of primary readers should aid the teacher of retarded children. With supplementary readers having the same vocabulary as the reader many more repetitions are given. When teachers can find such supplementary books they may be substituted for some of the stories which the teacher will have to write for the children. It should be remembered, however, that no book can be as meaningful as a story based on the child's immediate experience. Consequently, the supplementary readers should not entirely take the place of "made stories" in a class of backward children.

THE BASIC VOCABULARY

Teachers of mentally retarded children ask, "What words should be introduced and made a part of the child's sight vocabulary?" No experiments have been carried out to determine what words mentally retarded children should learn. Dolch, however, has compiled a list of basic words (except nouns) that all children should know by sight. This list is included here for the reference of the teachers.

Gates³ has analyzed the vocabularies of primary readers and

¹ MARJORIE HARDY, *Surprise Stories*, Wheeler Publishing Company, pp. 1-140.

² The Macmillan Company.

³ ARTHUR I. GATES, *A Reading Vocabulary for the Primary Grades*, pp. 1-29.

A BASIC SIGHT VOCABULARY OF 220 WORDS, COMPRISING ALL WORDS, EXCEPT NOUNS, COMMON TO THE WORD LIST OF INTERNATIONAL KINDERGARTEN UNION, THE GATES LIST, AND THE WHEELER-HOWELL LIST¹

CONJUNC-	PRO-		ADJEC-		VERBS	VERBS
TIONS	NOUNS	ADVERBS	TIVES			
and	*myself	so	kind	could	must	
as	our	soon	*light	cut	open	
because	she	then	little	did	*pick	
but	that	there	long	do	play	
if	their	today	many	does	please	
or	them	*together	new	*done	pull	
	these	too	old	don't	put	
	they	up	one	draw	ran	
PREPOSI-	this	very	*own	drink	read	
TIONS	*those	*well	pretty	eat	ride	
	us	when	red	fall	run	
about	we	where	right	find	said	
after	what	why	round	fly	saw	
at	*which	yes	*seven	found	say	
by	who		*six	gave	see	
down	you	ADJEC-	small	get	shall	
for	your	TIVES	some	give	show	
from			ten	go	sing	
in			the	*goes	sit	
into	ADVERBS	a	three	going	sleep	
of		all	an	got	*start	
on		again	any	grow	stop	
over		*always	*best	had	take	
to		around	*better	has	tell	
under		away	big	have	thank	
*upon		*before	black	help	think	
with		far	blue	hold	*try	
		fast	both	am	*use	
		first	brown	are	walk	
PRO-	here		*clean	ask	want	
NOUNS	how		cold	ate	keep	
	just		*eight	be	know	
he	much		every	been	laugh	
her	never		*five	bring	let	
him	no		four	buy	like	
his	not		full	call	live	
I	now		funny	came	look	
it	off		good	can	made	
*its	once		green	carry	make	
me	only		hot	come	may	*write
my	out					

* The twenty-seven words marked with asterisks were included in only two of the lists.

¹ EDWARD W. DOLCH, "A Basic Sight Vocabulary," *The Elementary School Journal* (February, 1936), pp. 458-59. By permission of the author and publisher. (*The Basic Sight Vocabulary Cards*, by E. W. DOLCH, containing all the words in the word list are published by The Garrard Press, Champaign, Illinois.)

has selected 1811 words that appear most frequently. The teacher of retarded children may select from this list the words that will be most useful to her pupils. Stone¹ also has tabulated the most important 150 words to be taught children before books are introduced.

The teacher of retarded children should be acquainted with the various word lists so that the necessary words will be included in the children's pre-book work. Other words, of course, may also be used, but unless the child masters by sight the words that appear most frequently in books, reading will become too laborious a process. Mastery of the words used most commonly in primers and first readers aids the child in reading fluently and with meaning.

SEAT WORK AND OTHER ACTIVITIES FOR BEGINNING READERS

Mentally retarded children sometimes learn to read mechanically and without much comprehension. The teacher should constantly stimulate the children to understand what they are reading. A good method to assure adequate comprehension, and to offset any stress on mechanics of reading that may have developed in the reading recitations is to provide seat-work activities that direct the child to read for understanding. Furthermore not all of the reading training can be done by recitations and incidental reading. The child must develop some independence in reading and at the same time engage in purposeful activities while other children are reciting. Some methods for seat work are here presented.

1. Making and tracing stories on charts for "moving-picture" reading has been mentioned previously. This activi-

¹ CLARENCE R. STONE, *Better Primary Reading*, pp. 50-53.

ity gives the child motor and kinaesthetic acquaintance with words. Fernald¹ and Kirk² have demonstrated that tracing and writing words aids the learning and retention of those words. Consequently any reinforcement of words by a kinaesthetic cue aids the learning of those words. This activity, therefore, becomes more than mere busy work, provided the child knows what he is doing and is not simply copying a "geometric design."

2. Mimeographing pictures and words and instructing the child to draw a line from the picture to the correct word is a method which develops word-recognition. Words such as *boy, horse, the, beautiful* may be typed under a picture of a boy. The child may be given the direction to find the word which fits the picture. At a later stage the word *boy* may be given with words of similar characteristics such as *ball, dog, wing*, and the like. In this way word discrimination and word-recognition is aided by the process of proceeding from simple to more difficult discriminations, and at the child's own rate of development.

3. A method which is similar to the one just described is to write short phrases and sentences under pictures and instruct the child to circle the phrase or sentence that describes the picture. For a picture showing a boy running, the teacher may write several sentences such as:

The dog is running.
The boy is standing.
The boy is running.
The girl is running.

¹ G. M. FERNALD and H. KELLER, "The Effect of Kinaesthetic Factors in the Development of Word Recognition in the Case of Non-Readers," *Journal of Educational Research* (December, 1921), pp. 355-377.

² SAMUEL A. KIRK, "The Influence of Manual Tracing on the Learning of Simple Words in the Case of Subnormal Boys," *Journal of Educational Psychology* (October, 1933), pp. 525-535.

4. Gates¹ has suggested the use of picture cards with the words and pictures on one side and the identifying word or words on the other side. The child may play with the cards and check himself, or one child may test another with these cards. Many games which aid recognition may be played with picture word-cards. Vaughn and Hubbs² conducted an experiment with lower grade morons (IQ 50-62) on the teaching of a reading vocabulary with picture word-cards. By utilizing the Garry Cleveland Meyers picture word-cards in their study they found that the lower grade of mentally retarded children could learn and retain words by this method, and that their progress far exceeded those of children who were given only classroom instruction. The children learned five or more words per day by utilizing the cards in various ways. The children first looked at the picture and word, pronounced it to themselves, then turned the card around and tried to remember the word without the picture.

Instruction by means of picture word-cards is not advocated as a sole method of teaching reading. However, if the teacher selects the words that the child should know for beginning reading, this method will prove helpful in teaching word-recognition. A phrase or sentence may also be typed under a picture while the reverse side of the card may show only the phrase or sentence. For example, on a card containing a picture of a dog running, there may be written, *The dog is running*. On the reverse side of the card the same sentence may be written. In this way the child may read the sentence and check his reading by turning the card over and looking at the picture. This is the same method proposed by

¹ ARTHUR I. GATES, *New Methods in Primary Reading*, p. 200.

² CHARLES L. VAUGHN and LORENA HUBBS, "Teaching Reading Vocabulary to Lower Grade Morons," *American Association on Mental Deficiency* (May, 1937), pp. 68-76.

Gates but this method utilizes phrases and sentences instead of words.

5. A device similar to the one just given is pasting words, phrases, and sentences written or typed by the teacher on pictures which have been drawn by the children or cut out from magazines. The child may paste the words or sentences on these pictures and make a little booklet of them. In this way word-recognition and reading for meaning is facilitated.

6. An interesting device utilizing the sentence completion method may be used by mimeographing known sentences and stories and omitting certain words. The child may write in the missing word, or draw a picture of the missing word. An example of this type of activity is given:

- | | |
|------------------|---|
| I am a _____ | The child draws or cuts out a picture of a boy, or girl and pastes it in the blank space. |
| My name is _____ | The child writes in his name. |
| I go to _____ | The child pastes a picture of school or writes it in. |

7. Written directions for the child to execute is another useful reading activity. This may be done in a variety of ways. One way is to write instructions for completing pictures, such as:

- Color the apple red.
Color the pencil yellow.
Color the boy's coat blue.

Pictures and short sentences may be mimeographed with directions. The child may be told to underline one of the pictures, or to draw lines connecting certain pictures, or to complete a picture in a specific way.

8. Free reading must be provided for the children as soon as they can read. A supply of a great variety of pamphlets and books of easy materials should be in the classroom. The

child should be allowed to select any book he wants and read it whenever he wishes. The teacher must constantly guide the child to read for comprehension. Free reading will also enable the teacher to observe the interests of the children through their choice of books.

Free reading should be one of the aims of initial instruction in reading. Whenever a child selects a book either to look at the pictures or to read the contents the teacher must not interrupt the activity. Some teachers insist that a child complete his work-book or his assignment before he reads. This attitude indicates that the teachers have lost sight of the "end" of any assignment for the "means." Referring to the course in beginning reading, Gates asserts: "*Indeed, a primary purpose of the course is to make possible a greater amount of reading which is really free and fluent, uninterrupted by the teacher and unencumbered by mechanical difficulties.*"¹

9. Many assignments in reading books or work-books are usually given to children for seat-work activity. To guide the child's purpose in reading the teacher should keep in mind some of McKee's² suggestions, reproduced below:

1. Discover what the story is about.
2. Discover what happened next.
3. Tell the story read.
4. Determine if the story could be dramatized.
5. Discover the sequence of events.
6. Select parts for dramatization.
7. Determine the properties and characters needed for dramatization.
8. Discover most interesting part of the story.
9. Guess riddles.
10. Discover how the story may be illustrated by pictures.

¹ *Op. cit.*, p. 207. By permission of Teachers College, Columbia University, publishers.

² PAUL MCKEE, *Reading and Literature in the Elementary School*, pp. 210-211.

11. Discover how the story differs from a known similar story.
 12. Prove a point.
 13. Answer questions.
 14. Verify statements.
 15. Ask questions answered by the material.
 16. Discover directions for performing some activity.
 17. Name a title for the selection.
 18. Gather information on a problem to be taken up in class.
 19. Make drawings of events.
 20. Prepare for an informal testing exercise.
 21. Select main points.
10. Many basal readers are accompanied by work-books which include numerous seat-work activities based on the vocabulary of the reader. If these work-books are carefully selected and are not too difficult, they may be used with backward children for seat-work activities. It is true that seat-work activities instigated by the teacher are more adapted to the experience and ability of the child than the activities suggested by the commercial work-books. Therefore the teacher should make an effort to prepare for such activities materials which would obtain results superior to that which can be derived from commercial work-books. However, the teacher must devote sufficient time and thought to preparing the materials, to insure their adequacy. Otherwise, it is preferable to use commercial work-books.

TEACHING RETARDED CHILDREN IN THE ELEMENTARY GRADES

The approach to instruction in the initial stages of reading for subnormal children in special classes should not be difficult for a teacher. If the class is homogeneous the program for reading instruction may be given to the whole group, or to smaller groups within the large group, depending upon the

number of children and the different stages of their development. If the class is ungraded the program of initial instruction in reading may be given to the group that requires such training. Similarly, if a mentally retarded child is placed in the first grade with normal children, it may be well to use a program of teaching reading as outlined in this chapter. The teacher should intensify, vary, and repeat many of the stories for the retarded child even though such repetition may not be necessary for the normal child.

It has been mentioned before that most mentally retarded children are not in special classes but in the regular elementary grades. Many retarded children who have not begun to read are found in the second, third, fourth, and even the fifth grades of the elementary school. The children have been promoted, not for their achievement but because the teachers believe it unwise to retain a child in the first or second grade for more than one or two years. A retarded child who cannot read may be advanced even to the fifth grade merely because of his age and physical similarity to mentally normal children.

The regular grade teacher who has one or two such children in her class faces a difficult problem. Logically she should be instructing the child in beginning reading, yet the curriculum of these grades is designed for normal children who can read. Much of the learning in the intermediate grades is dependent upon reading ability. The subnormal child who is unable to read is consequently bewildered. The older subnormal child who cannot read develops defense mechanisms, a bullying attitude, and unwholesome compensations when he is placed in the intermediate grades. A behavior problem has been defined as the discrepancy between the capacity of a child to perform, and the requirements of the environment. If the environment of a subnormal child requires reading ability, as it does in the third, fourth, and fifth grades, and the child is

unable to read at all, the stage is being set for a behavior problem.

Many regular grade teachers ask: "How can I teach the retarded child in my class to read when my curriculum does not provide for initial instruction in reading?" Two approaches to this problem may be made, (1) by giving the child an opportunity to excel in some non-academic activity, and (2) by teaching the child beginning reading. These approaches may be made as follows:

1. Give the retarded child every opportunity to engage in tasks that he can do well. He may be able to draw, dramatize, do handwork, tell about his experiences, and play with normal children. He even may be able to excel in some of the classroom activities. Some teachers give the retarded child certain responsibilities in class, such as caring for the pencils, keeping library books in order, handing out and collecting papers, taking care of the garden or watering the flowers, straightening up after class is dismissed, and other similar activities that the child can do.

The purpose of encouraging a retarded child to do non-academic work in the class is to aid him in establishing self-confidence as well as to imbue the normal children in the class with the feeling that the retarded child is their equal in many respects. In this way the retarded child becomes a part of the group except in some of the academic activities such as reading. If the teacher succeeds in aiding the retarded child to share in many activities with the group, the normal children will soon realize that this child cannot read as well as they can, but also that they probably cannot run as fast as he, or care for the plants as efficiently as he does.

2. Give the backward child individual instruction in reading. If the child cannot read and must have the same instruction as a beginner, he should be taught as a beginner. The teacher

of a regular second, third, fourth or even fifth grade obviously need not prepare charts based on the child's experience, or build a "moving-picture" box or use a projection lantern for the presentation of simple materials for one or two children in the class who require such instruction. But the teacher can use some of the methods and apply some of the principles that are utilized with backward children in a special class.

Many teachers in the elementary grades set aside a part of the day, a "special help period," to aid individual children with their work. In this period the teacher may give the retarded child individual instruction in beginning reading. She may utilize any technique described in this chapter which may be applicable to the child. The following suggestions may aid the teacher who wishes to give instruction in beginning reading to the mentally retarded child in her class though the curriculum does not include such an activity.

a. Instead of writing on the board a story which the child relates from his experience, the teacher may write the story for the child on a piece of paper at his desk, and allow him to read it.

b. Instead of placing the written story on a large chart the teacher may type the story the next day and instruct the child to read it.

c. After many such stories have been typed the child may compile them into a book and at various times may read these books to the teacher or to others.

d. For seat-work activities the backward child may trace or print stories of his own. Occasionally he may ask for help from the teacher or one of the pupils.

e. Picture word-cards, with a picture on one side and the word or phrase on the other, may aid the child in learning words and phrases without aid from the teacher.

f. If a typewriter is available, the backward child should be

allowed to use it to copy some of his stories or to perform some other exercise which may aid him in learning to read.

g. Primers or simple pamphlets and books may be used whenever the child has acquired a sight vocabulary sufficient for the task. When these are first introduced the teacher should devote some time to the child to help him receive an adequate start.

h. In all the child's activities the teacher should aim to develop a sight vocabulary of words most commonly used in primary books. The word lists of Gates, Dolch, and Stone referred to in this chapter should be familiar to the teacher.

i. The child should be given directions in writing so that he may become accustomed to the utilization of reading for a purpose. These directions should be simple and within the child's reading ability.

j. An effective method used by some teachers is to allow an advanced pupil in the class to help the retarded child. Careful selection of a "tutor" will result in adequate progress. Many teachers are unable to take time from their class duties to devote to individual instruction of the backward child. It is therefore necessary to supplement the teacher's instruction of the backward child with help from a normal pupil. The teacher should observe the reactions of the pupils in the class toward the retarded child and select the one who is most friendly to help the backward child learn to read. In many cases pupils in a class are happy to have the opportunity to help another child. Sometimes the retarded child can help the normal child in some other task. A retarded boy once said, "My friend helped me in reading and I helped him when he got in a fight."

SUMMARY

In teaching beginning reading to mentally retarded children the following points should be noted:

1. Present materials to children in conformity with the psychological process of reading. Children first perceive whole sentences as vague blocks and gaps. To progress in reading they must learn the details of the sentences and the details of the words. Lastly, by the process of "cue reduction" the awareness of the details are reduced and the child is capable of reading without being conscious of words or letters.
2. It is doubtful that the natural or activity method of teaching reading can be used successfully with mentally retarded children. Because of their relatively inadequate methods of generalizations retarded children must have guidance in learning to read. The systematic experience method, supplemented by incidental reading, is recommended.
3. The mentally retarded child must have the beginning reading materials presented repeatedly over a prolonged period of time and in different settings.
4. The teacher must write stories comprehensible to these children since readers constructed for normal children are too difficult for mentally retarded children. If readers are used they should be supplemented by mimeographed stories by the teacher, or by adequate commercial supplementary pamphlets, books, and work-books.
5. Seat-work materials designed to aid children in learning details, in word-recognition, and in other skills in reading should be used.
6. Instruction in the initial stages of reading may be adapted to mentally retarded children who are placed with normal children in the intermediate elementary grades, even though the curriculum of those grades does not provide for instruction in beginning reading.

Increasing Efficiency in Reading

APPLICATION by the teacher of the instructions given in Chapter IV will enable the mentally retarded child to read many stories prepared by the teacher as well as a number of simple books corresponding to the primer and first-grade levels. The great majority of mentally retarded children with an IQ above 50 or 55 are capable of attaining this level. Many of them, especially those with IQ's in the 60's, can go beyond first-grade reading. Those with IQ's in the 70's should be able to attain fourth to sixth grade in reading ability. These children will be able to read for information and pleasure.

This chapter will be devoted to the methods of increasing reading efficiency beyond the first-grade level. It will discuss (1) methods of word-recognition, (2) methods of teaching phonics, (3) methods of teaching context clues, (4) the significance of oral and silent reading, (5) the function of interest in increasing efficiency, (6) methods of improving comprehension, (7) the effect of competition, and (8) the goals and methods for teaching advanced reading to mentally retarded children at the higher levels.

METHODS OF WORD-RECOGNITION

If a child is to read independently, that is, without his requiring the teacher's aid, he must be taught a method of recognizing new words in reading. Mentally normal children can usually learn methods of word-recognition without definite instruction. Mentally retarded children and some normal children require guidance and instruction in learning to recognize new words because they are deficient in the ability to make generalizations and inferences, a factor which is required for learning methods of word-recognition without aid. Mentally retarded children use the same methods of word-recognition as mentally normal children. Backward children apply the methods more slowly, however, and they require the teacher's guidance.

Mentally normal children utilize various methods to recognize words in reading. Dolch¹ and Gates² have summarized these methods. Some of them will be described here with an evaluation and application to mentally retarded children.

Incidental Methods of Recognizing Words

Children learn to recognize words incidentally during the process of beginning reading. They "pick up" words in sentences when these words have been presented to them repeatedly in different settings. Mentally retarded children are also capable of "picking up" many sight words if these words have been repeated often enough in different contexts. However, mere repetition is not sufficient to increase word-recognition. Reading the same story repeatedly does not aid the child to learn the words efficiently. The same words must

¹ EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, pp. 56-65.

² ARTHUR I. GATES, *The Improvement of Reading*, pp. 233-243.

be presented in different settings, and at different times rather than during the same period.

Recognizing Words by Some Clue

Gates¹ has enumerated some of the methods by which children learn to recognize words. The children may depend upon some characteristic of the word such as the dot over the *i* or the shape of the *t*, or upon the configuration of the total word in terms of its form or shape. Other methods include analyzing the words into visual parts, and spelling them out.

It may be well to evaluate the methods of word-recognition listed above in terms of their applicability to mentally retarded children. The methods have been derived from studies which showed what children learn when left to themselves to recognize words. If the teachers have emphasized a particular method of word-recognition, the children naturally tend to use that method. Many children use a variety of methods of word-recognition rather than only one of the methods described here.

When a child depends only upon a characteristic in a word he is likely to make many errors in reading since many words have similar characteristics, such as *i*'s, *t*'s, and *y*'s. The method of depending solely on the characteristics of words does not teach a mentally retarded child to recognize words but rather encourages guesswork which leads the child to make many erroneous responses. Since it is more difficult to remove errors than to teach new words to mentally retarded children, these methods which do not specifically avoid initial errors are inadequate. The methods listed previously are adequate during beginning reading when relatively few new words are being presented in a story from the child's experience. For recognizing and attacking many new words in reading, how-

* *Op. cit.*, pp. 233-243.

ever, it is doubtful if these methods will aid the child appreciably.

The spelling method is no longer used with either normal or mentally retarded children. Nevertheless, although they have not been taught this method, many mentally retarded children make use of spelling in an attempt to recognize words. It may be claimed that the spelling method, like the method of depending upon some characteristic of the word or upon the configuration of the word, is followed naturally by the children, and that they should therefore be helped in this direction. Yet those versed in the field of reading do not advocate a spelling method of teaching word-recognition. Although the child may "pick up" this method it need not be encouraged or used.

Recognizing Words Through Context Clues

By reading the whole sentence, the child is capable of guessing an unknown word. This is done only when the new word is within the child's known vocabulary. The use of context clues for word-recognition is probably more difficult for the mentally retarded child than for the normal child. When a mentally retarded child who is deficient in the ability to make inferences attempts to recognize words from context clues, he is likely to make a number of wrong guesses. Although the context clues method should be used to aid the mentally retarded child, it is not too reliable for teaching word-recognition.

Recognizing Words Through Phonic Analysis

The phonic method has been widely used in America to give the child independence in the recognition of new words. Since the value of phonics has been debated for a number of years it might be well to evaluate this method further and to consider its applicability to the teaching of mentally retarded children.

Phonics refers to the method of recognizing new words by sounding out the elements or groups of elements in the words. When the alphabet method of teaching reading was discarded the phonic method took its place. Later, however, when it was discovered that children could learn words and sentences without the use of phonics, some school systems discarded it entirely. Many experiments have been conducted on the value of phonics in teaching reading to mentally normal children. Some studies have shown that phonics is beneficial while others have shown that it is detrimental. Herein is a summary of several viewpoints of modern writers in this field.

Phonics has been assailed on the ground that it is unnecessary, that it makes children word conscious, that it introduces unnatural articulations, and that it teaches children to "bark" at words. On the other hand authors who have evaluated the use of phonics have more recently concluded that a moderate use of phonics is advisable.

Dolch, in discussing phonics, asserts:

Therefore it is clear that the schools should give to all children the means of pronouncing for themselves the host of new words which they will at some time meet and will have to learn without aid from others.¹

Pennell and Cusack, after discussing disadvantages and advantages of phonics, conclude:

The consensus of opinion among authorities seems to be that it is desirable for children to have a moderate amount of phonetic skill, together with the ability to use other clues. They agree that too detailed a treatment of phonics, making it a science in itself and not merely an aid to the child in reading, should be avoided.²

¹ EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, p. 71. By permission of Ginn and Company, publishers.

² MARY E. PENNELL and ALICE M. CUSACK, *The Teaching of Reading for Better Living*, p. 206. By permission of Houghton Mifflin Company, publishers.

McKee in discussing this problem states:

As determined by a survey of the investigations on word recognition, the opinion of the writer is that the child must acquire effective means of recognizing new words. While there is no intimation here that phonetic training will do a perfect and complete job, there are many indications that the right phonics will be helpful in attacking new words of a phonetic character. There are, however, certain principles that the teacher must keep in mind. These are as follows:

1. Phonics is only one tool for use in attacking strange words. Other tools such as analogy are important and need to be taught to the child.
2. Phonetic analysis is not a method of teaching children to read. It is merely a tool to be used in recognizing strange words and should be treated as such by the teacher and pupils.
3. Drill in phonetic analysis must not be emphasized to the point that the child fails to read for meaning. Such intensive training defeats its own purpose and probably destroys proper reading attitudes and interests.
4. Phonetic training is only one of several activities to be pursued in the first grade relative to the reading program.
5. Phonetic training is not an end in itself. It is merely a means to gathering thought from printed expressions.
6. The phonetic training provided must be that which the child needs most in actual reading situations.
7. Training in phonics should occur outside the so-called regular reading period in which reading should be taught as a thought-getting process.¹

Authors seem to agree that an excess of phonics may be detrimental but that phonics properly taught is essential to reading.

Few studies have been made concerning the value of phonics

¹ PAUL MCKEE, *Reading and Literature in the Elementary School*, p. 192. By permission of Houghton Mifflin Company, publishers.

with mentally retarded children. Those that have been made will be summarized briefly.

Baker states:

Phonic methods imply the ability to generalize upon words and build up many complicated associations. While this type of teaching may produce effective results for bright pupils, the benefits for dull pupils are very doubtful. Dull pupils are not able to make the needed associations, so that phonetics becomes for them a confusing and extraneous element.¹

Baker presents no experimental evidence for these statements. He bases the statement upon the judgment of teachers. It is doubtful that the teachers whose observations he quotes actually tried an adequate system of phonics and found it lacking. The statement does not agree with any of the published studies of phonic training with mentally retarded children.

MacIntyre² employed a phonic method in teaching reading with adequate success. She presents evidence showing that mentally retarded children can exceed their mental age in reading.

A study at Letchworth village by Braem,³ which compared a class taught by a phonic method to a class taught by a non-phonetic method, shows that the phonic group learned twice as much in the same period as the non-phonetic group of mentally retarded children. Both groups of children were tested before and after the experiment.

¹ HARRY J. BAKER, *Characteristic Differences in Bright and Dull Pupils*, p. 45. By permission of the Public School Publishing Company, publishers.

² E. MILDRED MACINTYRE, "Teaching of Reading to Mentally Defective Children," *American Association on Mental Deficiency* (May, 1937), pp. 59-67.

³ HELEN R. BRAEM, "An Experiment at Letchworth College," *New York State Education* (October, 1930), pp. 162-164.

Hegge¹ and Kirk² worked with mentally retarded reading disability cases and have demonstrated that a systematic phonic method was effective in teaching reading to mentally retarded children who have failed over a period of years. These studies will be reviewed in Chapter VI.

METHODS OF TEACHING PHONICS

Since teachers colleges and schools of education have eliminated instruction in phonics it may be well to give briefly a system of phonics which may be used in the classroom with mentally retarded children. This system should not be given to the children until they have begun to read and have acquired a sight vocabulary of fifty to one hundred words. They should begin to realize that they require a method of word-recognition to make them independent of the teacher. When this stage has been reached the teacher may introduce phonic training in the manner described below.

General Directions for Teaching Phonics

Many of the tirades leveled against phonics refer to its extreme use, such as in beginning reading, or to such an excess that it is detrimental to comprehension in reading. Nevertheless, phonic training, if judiciously and properly used, has a place in the teaching of reading to mentally retarded children. Very few teachers, however, have been trained to teach phonics. From observation of the erroneous methods utilized

¹ THORLEIF G. HEGGE, "Special Reading Disability with Particular Reference to the Mentally Deficient," *American Association on Mental Deficiency* (May, 1934), pp. 297-343.

² SAMUEL A. KIRK, "The Effects of Remedial Reading on the Educational Progress and Personality Adjustment of High Grade Mentally Deficient Problem Children," *Journal of Juvenile Research* (July, 1934), pp. 140-162.

in teaching phonics to mentally retarded children, it is small wonder that Baker states it is confusing to the children.

Some generalizations in the teaching of phonics are given to aid the teacher who wishes to utilize this method with mentally retarded children.

1. Introduce phonic training only after the child has learned to read slightly and has acquired a sight vocabulary of fifty to one hundred words.

2. Derive the same sounds from words which the child already knows and apply these sounds to words that the child does not know by sight but which are within his meaningful vocabulary.

3. Give phonic training outside the regular reading period and make the transfer to the reading situation.

4. Comprehension should not be forgotten during phonic training. Reading is taught as a thought process, whereas phonics introduces mechanics of reading. If the child first learns to read thought units and has separate phonic lessons which are transferred to the reading period, much of the mechanical reading will be avoided.

5. Be sure the child has learned to blend sounds before presenting him with the visual symbols.

6. Emphasize as far as possible the sounds and words that will come up in the reading lesson.

7. Do not introduce rules for phonics to mentally retarded children. Rules involve generalizations and since mentally retarded children are deficient in the ability to generalize they will have difficulty in learning. The method of teaching phonics outlined in this chapter avoids the use of generalizations or rules.

8. Remember that the English language is not entirely a phonetic language and many words will have to be taught by sight. If the child has also learned context clues he will be

able to recognize many new words in reading, partly through phonic analysis, and partly through context clues.

9. Teach phonics systematically and avoid simultaneous introduction of too many new symbols. Introduction of new material while old material is only partly learned tends to interfere with the retention of the old material. This interpolation of material which tends to inhibit the recall of previously learned material is called *retroactive inhibition*. Over-learning, however, helps to counteract the effects of retroactive inhibition.

10. Bear in mind phonics must be taught carefully lest it confuse the child.

Specific Directions for Teaching Phonics

The method of teaching phonics for classroom use proposed here is an adaptation of an individual method applied to mentally retarded reading disability cases.¹ According to this method the following suggestions are given:

1. Before phonics is begun the teacher should introduce ear training so that the child knows words are composed of sounds. After this training of auditory memory and discrimination by means of reading, rhythms, and other games given in Chapter III, the child is ready for phonics.

2. The children should be taught the sounds of the consonants and the sound of one vowel, preferably the short sound of *a*. If the children know the word *cat* by sight they can be shown that it is made up of the sounds *c-a-t*. Then they can be presented with other simple words such as: *f-a-t, r-a-t, r-a-n, m-a-n*, and the like. At first the children may have difficulty

¹ THORLEIF HEGGE, SAMUEL A. KIRK, and WINIFRED KIRK, *Remedial Reading Drills*, pp. 1-58.

² SAMUEL A. KIRK, *Manual of Directions for Use with the Hegge-Kirk Remedial Reading Drills*, pp. 1-49.

in sounding out the words and in blending the sounds into a word, but if the teacher starts at a simple level and gradually increases the difficulty, the children will soon learn to use the sounds of the single consonants and the sound of the vowel *a*.

A variety of presentations may be utilized. After the teacher has given the sound of the short vowel *a*, five or six consonants may be taught and presented in words with the vowel *a*. A child may sound out the words and say them, or one child may sound out a word while the class tries to identify it. In this way training is given in sound blending, and in identifying the sounds of some of the consonants and the short vowel *a*.

This method of presentation differs somewhat from most published phonic systems. In the past, two general methods have been used. One method proposes that the initial consonant and the vowel be combined as one sound, such as *ca-t*, *sa-t*. The other system combines the vowel with the final sound, such as *s-at*, *c-at*. Mentally retarded children are confused by both of these methods. The retarded child tends to repeat the consonant with the vowel in other sounds once he has fixated a certain sound combination. To illustrate, if the child has learned *c-at*, *s-at*, *m-at*, and is presented with *c-ap*, he tends to read it as *c-at-p*. Or if the child is presented with *ca-t*, *ca-p*, *ca-n*, and is later presented with *co-b*, *co-p*, and the like, he will tend to read them as *ca-o-b*, *ca-o-p*. *With mentally retarded children, therefore, it is best to teach them the individual sounds, whether or not they are individual letters or groups of letters.* The word *cat* should be sounded as three distinct sounds, *c-a-t*, rather than two sounds. The word *feed* should be presented as three sounds, namely *f-ee-d*. This method will avoid confusion and perseveration on the part of the retarded child.

During the reading period the teacher should not ask a child

to sound out a word if he has not been taught the sounds. For example, if the child has learned the sounds of the consonants and the sound of the short vowel *a*, and he is confronted with the word *hit*, the teacher should say "hit" when the child hesitates over the word so that he will not be confused. On the other hand if the child is confronted in reading with the word *fat*, and he has learned the consonants and the short vowel *a*, he should be asked to sound it. In that way the phonic training given in a separate period is transferred to a reading situation.

3. After the child has learned the sounds of most of the consonants and the sound of the short vowel *a*, he should be given, singly, the sounds of the short vowels *o*, *u*, *i*, and *e*. These should be presented very gradually and in connection with sounds previously learned. After the child learns *a*, the sound of *o* should be introduced in words that the child knows, and in new words as was done in the case of *a*. Then the teacher should present words having *a* in them and also words containing the sound of *o*, such as *hat*, *hot*, *cap*, *cop*, *cot*, *cat*, and the like, so that the child will learn to differentiate the vowels in words. When *u* is introduced and learned a review of *a*, *o*, and *u* should be presented in different words such as *hat*, *hot*, *hut*.

Some of the vowels may cause difficulty. The vowel *e*, for example, occurs more frequently in reading than the other vowels, yet it is more difficult for mentally retarded children to learn. Some exercises in saying *ɛ* or any other sound which causes difficulty may have to be given by the teacher. It is probable that the sound of *ɛ* is difficult to learn because it is similar to the sounds of *ə* and *ɪ*.

4. After the vowels and the consonants have been taught the teacher should introduce sounds made up of several letters. Thus the sound of *ee* in *feed*, *seed*, *meet* may be introduced.

The child can learn the sound of *ee* as a configuration, the same way he learns the sounds of *a* or *o*, without rules. In this way no confusions are introduced. The sound of *ay* in *day* and *ai* in *maid* should be introduced also as configurations and not by rules.

Erroneous methods of phonic instruction are frequently employed by classroom teachers. One case may be cited. A teacher told the class the symbol *a* was *ay* as in *day*, but that it had four or five different names in the same way as "John" (a boy in the class) had three names, John George Smith. She continued that the symbol *a* was *ă* in *cat*, *ā* in *day*, and the like, until she had demonstrated the five sounds for the letter *a*. A system of this sort for mentally retarded children is probably more confusing than the use of no phonics since it introduces too many complications.

The system presented in this book avoids confusions. The sound of *a*, as in *cat*, is learned only when it sounds *ă*. When it differs from the sound of *a*, in *cat*, it is presented as a new configuration as *ay*, in *day*, or *ai*, in *maid*. Similarly, *e* is presented only as *e*, in *set*. When it differs from this sound there is a new configuration, as *ee* in *feed*, and *ea* in *meat*. The configurations are first separated from the other letters thus: *m-ee-t*.

5. Since mentally retarded children must be presented with simple materials, the phonic configurations that are easiest to learn are first introduced. Secondly, come phonic symbols that appear most frequently. The configuration *ee*, in *feed*, is probably easier to learn than the sound of *e*, in *set*, or than the sound of a vowel which is altered because of a final *e*. The simple sounds should be introduced first, yet there should be no introduction of sounds that appear infrequently in the primary vocabulary.

6. The following presentation of sounds is suggested. The

be varied by the teacher in conformity with the children, and in conformity with the book that

The teacher should preview the books that the reading and select the sounds that they should new words.

the consonants *b*, *c* (hard), *d*, *f*, *g* (hard), *h*, *j*, *k*, *t*, *v*, *w*, with the vowel *a*, as in *cat*.

the sounds of the short vowels *i*, *o*, *u*, and *e* in the consonants.

sounds such as *oo* (food), *ee* (feed), *ar* (car), *ai* (lay), *or* (for), *old* (cold), *ea* (meat), *oa* (boat), *l* (ball), *er* (her), *ir* (fir), *ur* (fur), *sh* (ship), *ch* (it), *wh* (when).

sounds such as *un*, *en*, *in*, *an*, *on*, *ink*, *ank*, *unk*, *and*, *ound*, *est*, *all*, *ill*, *ell*, *ly*.

llabication, suffixes, prefixes, and so forth.

-phonic or infrequent sounds such as the *a* in *zs* should not be taught as sounds. Words with sounds should be taught as wholes without phonics.

should be encouraged to use his phonic knowledge. If a child sounds out an unfamiliar phonic soon become a part of his sight vocabulary. a method of independent word-recognition is used.

cautions should always be remembered in teaching phonics to mentally retarded children. First, a casual teaching phonics is useless. The child should be phonics when needed. Secondly, emphasis should be given to comprehension in reading. Phonics is not an end and not an end in itself. Finally, as a method of word-recognition is not sufficient for reading. In addition to phonics, context clues,

syllabication, and other methods should be developed. With the aid of several methods the child can become a more efficient reader.

METHODS OF TEACHING CONTEXT CLUES

It has been indicated heretofore that the English language is not exclusively a phonetic language. For this reason an additional method of word-recognition should be taught. A good supplement to the phonic method is the use of context clues.

Because of their ability to generalize, superior children learn to use context clues without aid from the teacher. Mentally retarded children are deficient in their ability to generalize and are therefore deficient in recognizing words by means of context clues. This deficiency can be alleviated somewhat if the teacher gives specific instruction in the use of context clues. For example, a child has learned the sound of *ea* as in *meat*, and is confronted with a sentence, "The boy read a book." If the child has been trained in the use of context clues as well as phonics he will be able to read the word *read* correctly by a combination of phonetic analysis and the use of context clues.

Exercises and suggestions to aid the child in utilizing context clues are given here:

1. When the child is reading to the teacher and has difficulty in recognizing a word that is non-phonic, the teacher should take that opportunity to apply context clues. By questions and suggestions the teacher can guide the child to recognize the word without giving direct aid.

2. Completion sentences about a story aid the development of context clues. The teacher may use exercises such as:

We went to the _____ yesterday.

store — farm — market

I will sing a _____.

There are many variations of the completion type of sentence. Several words may be written under the blank space and the child asked to select the correct word, underline it, or write it in the space provided. Or a child may be given a set of word-cards and asked to paste the correct word in the blank space. This exercise is beneficial with words that are easily confused such as *was* and *saw*:

The man _____ angry.
I _____ the man.

or for *where* and *there*:

_____ are we going?
_____ are many children in school.

3. If reading is difficult for the children and the teacher wishes to vary the procedure, she may tell a story, pausing frequently to permit the children to continue the sentence or detect something that has been omitted.

4. Another type of exercise often used is the interchanging of parts of a story which the child is to rearrange properly. An example is:

I am _____ dog.
I have a _____ Mary.
His name is _____ to play.
He likes _____ Jip.

THE SIGNIFICANCE OF ORAL AND SILENT READING

In recent years the schools have minimized and neglected oral reading for mentally normal children. It has been stated that since silent reading is more rapid than oral reading, and since adults read silently, children should be taught to read silently. Also, oral reading has been found to conflict with efficient silent reading. Because of these points of view oral reading has been gradually disappearing from the classroom

and silent reading has surged forward even in the lower grades. First-grade children are required to read silently as fast as they can, sometimes too rapidly. Few authors, however, have advocated the complete elimination of oral reading in the initial stages of reading.

Actually it is difficult for children to read without first learning to read orally. Oral language is the tool with which the child comes to school. The aim of the school is to transfer this oral language to reading. Reading, consequently, begins through the use of visual-auditory symbols, rather than visual symbols and meanings, the adult reading method.

The first stage in the development of silent reading, a stage which is commonly mistaken for silent reading, has been called inaudible reading. The child uses the same throat and oral musculature as in oral reading, but he does not use the voice. This is exhibited by the great frequency of lip reading among beginning readers and especially mentally retarded children. Therefore, it may be concluded that comprehension of the thought from the printed page through the visual sense comes only after prolonged practice and through a short-circuiting process of first, oral reading, then inaudible reading, less vocal movement, less lip movement, and finally little or no vocal movement.

Furthermore, before the mentally retarded child can proceed to inaudible and "eye reading," he should continue oral reading longer and at a higher grade level than is usually allowed with the mentally normal child. The reasons for this conclusion are as follows:

1. Studies of eye movements in oral and silent reading found that during the initial stages of reading there are more fixations per line in silent reading than in oral reading.

Table 12 shows that in grade 1B during the initial stages of reading the fixation pauses per line for silent reading are more

TABLE 12. NUMBER OF FIXATIONS PER LINE IN ORAL AND SILENT READING FOR VARIOUS GRADE LEVELS

(Betts¹)

Grade	Fixations in	
	Oral Reading	Silent Reading
IB	16.0	18.6
IA	14.5	15.5
II	12.0	10.7
III	10.4	8.9
IV	10.3	7.3
V	8.7	6.9
VI	8.9	7.3
VII	8.7	6.8
College	8.4	5.9

frequent than the fixation pauses per line for oral reading. This means that oral reading during beginning reading is more efficient than silent reading. Likewise it may be noted that in grade II the fixation pauses per line have decreased more in silent reading and are fewer than in oral reading. This probably means that oral reading is essential during beginning reading but that later silent reading becomes more efficient as measured by fixation pauses.

2. Oral reading is a logical first step in learning to read. The child learns the meaning of words first through the auditory sense. When he commences to read, then, it is necessary to associate the sight of the word with the sound of the word which he already knows and then to make the connection from sight to meaning. Furthermore, experiments on learning by McGeoch² show that when children articulate they learn more rapidly than when they do not articulate. This was demonstrated by presenting syllables to children at all

¹ Arranged from Buswell's Data by E. A. BETTS, *The Prevention and Correction of Reading Difficulties*, p. 133. By permission of Row, Petersen and Company, publishers.

² J. A. MC GEOCH, "Experimental Studies of Memory," *Readings in General Psychology*, pp. 386-387.

levels from grade II to college. For one group the children were asked to articulate the syllable aloud. For the second group a pencil was placed in the mouth of each child. The children were then asked to bite this pencil as the syllables were presented to them so that articulation would be restricted. The experiment showed that for all grades those who articulated the syllables learned more rapidly than those who did not. If this hypothesis is correct then oral reading should be stressed with mentally handicapped children longer than is usual for normal children, since methods should be used which best facilitate learning with children whose main difficulty and deficiency is learning.

3. It has been stated before that in the teaching of mentally retarded children accuracy rather than speed should be emphasized. The child's reading aloud to the teacher is a test of the accuracy of reading. The teacher then will know at all stages what errors the child is making and can correct these errors before they become fixated into permanent habits.

4. Through oral reading the mentally retarded child can learn better pronunciation and enunciation and may learn a better use of the English language. Oral reading also aids the child in grouping words into thought units that may not have been used by the child in his environment.

5. Oral reading will also give the teacher insight into whether or not the child is comprehending what he is reading. By his intonation and the way he groups the words in reading the teacher can tell how well he understands the content. Oral reading, then, becomes a diagnostic method as well as a teaching method.

The comments on the use of oral reading with mentally retarded children are aimed to offset the great emphasis being placed on silent reading with mentally normal children in beginning reading. Many teachers of mentally retarded chil-

dren have taken the same attitude in their classes by emphasizing silent reading. As a consequence many of these teachers have been unable to produce any reading in some children. In fact it is not known how many mentally normal children become reading disability cases because the teacher in the first grade stressed silent reading before the child had learned oral reading sufficiently, or because he was not yet ready for silent reading.

In this connection Dolch states: "The simple fact seems to be that *any one becomes a silent reader just as soon as the mental process of comprehension goes too fast for the pronouncing to keep up with it.*"¹ In discussing the causes of lip reading Dolch further states: "Persons of low intelligence, for one thing, read slowly because their mental processes are slow. Therefore stupid persons may read with lip movements all their lives. They may practice until pronouncing is no longer necessary, but there will always be time at their slow comprehension rate for incidental pronouncing, and the overflow of nervous energy will tend to produce it."²

Stone³ also advises against the elimination of lip reading in the first grade. He believes that it is unwise to suppress the tendency to vocalize in reading during the early stages, and that the elimination of lip movements in the first grade should not be a specific objective.

The quotations and opinions of Dolch and Stone indicate these authors recognize that although the aim is silent reading, the attainment of this aim will have to be through oral reading during the beginning stages. This point should be emphasized even more with mentally retarded children. *Suppressing*

¹ EDWARD W. DOLCH, *The Psychology and Teaching of Reading*, p. 163. By permission of Ginn and Company, publishers.

² *Ibid.*, p. 164. By permission of Ginn and Company, publishers.

³ CLARENCE R. STONE, *Better Primary Reading*, p. 159.

oral reading and articulation at the beginning of reading may be suppressing the ability to read. Therefore it is safe to state that a longer period of oral reading should be stressed with mentally retarded children. The child's lip reading is a natural result of his early attempt to read and should not be suppressed at the outset by artificial directions such as "read with your eyes, not your mouth," and the like.

THE SIGNIFICANCE OF INTEREST

Experiments with school children have shown that learning takes place more rapidly and efficiently if the materials to be learned are meaningful and interesting to the child. In addition to the emphasis on repetition and developing a method of word-recognition, the degree of interest in materials presented to a child should be considered.

It has been stated before that if the child has attended school for several years and has been confronted with primers and first readers and has failed to learn he sometimes resents having these books again. His classmates have gone on beyond primer reading while he has not even mastered the primer. Because of his feeling of inferiority in this respect he attempts to justify his disinterest by calling such books "baby books." In Chapter IV it has been emphasized that much repetition of simple material should be given at first without the use of primers. This of course may apply only to children who have faced failure for a number of years.

Very few studies have been made on the interests of mentally retarded children. Gates¹ studied the reading interests of mentally normal children and included the interests of mentally retarded children. He concluded that materials which

¹ ARTHUR I. GATES, *Interest and Ability in Reading*, pp. 74-90.

are interesting to normal children are also interesting to mentally retarded children, and vice versa; materials that were uninteresting to mentally retarded children were uninteresting to normal children. He concluded that the elements in children's reading material which contribute most to interest are:

Surprise. The unexpected and unforeseen events, happenings, conclusions, and outcomes.

Liveliness. Action, movement, and "something doing."

Animalness. Stories which present things animals do, their acts, characteristics, and experiences.

Conversation. A story which includes dialogue.

Humor. A story that includes humor from the child's point of view. Many incidents which are humorous to the adult are not funny to children.

Plot.

Suitability. A story that comes within the range of experience of the children.

Difficulty. Stories which are not too difficult in vocabulary and meaning.

According to Gates,¹ factors which tend to decrease interest in a story are (1) difficulty of materials, (2) moralizing in a story, and (3) adult humor.

With mentally retarded children, especially those who have experienced failure, one of the most important factors in creating interest is *success in reading*. If the teacher presents material that the child can read successfully, interest will be greatly accelerated. On the other hand, materials may have elements of surprise, liveliness, animalness, and so forth, but if they are beyond the child's ability, he will not become interested in them. Selection of material should be within the child's ability but should not be so simplified

¹ GATES, *op. cit.*, p. 90.

that he will learn nothing from reading, or that he will become bored. *The materials should be easy enough for the child to read and sufficiently difficult to require effort and promote learning.*

COMPREHENSION

The aim of reading is to understand and evaluate what has been read. Too much stress on phonics, context clues, or oral reading, without due emphasis at all times on comprehension violates the main aim of teaching reading to mentally retarded children. The teacher should keep in mind that many of the devices suggested for increasing the efficiency of reading are only means to an end. Reading should foster an attitude of interest in and understanding of the material, not merely word-recognition and pronunciation.

Gray¹ has summarized recent definitions of reading. One definition, he says, is the "process of recognizing printed or written symbols." He considers this too narrow, however, and states that a slightly broader definition involves the recognition of the important elements of meaning in their essential relations, and includes accuracy and thoroughness in comprehension. Such a definition places the major emphasis on grasping the meaning. A still broader definition "assumes that the reader not only recognizes the essential facts or ideas presented, but also reflects on their significance, evaluates them critically, discovers relationships between them, and clarifies his understanding of the ideas apprehended."²

Gray's definitions tend to broaden the concept of reading

¹ WILLIAM S. GRAY, "The Nature and Types of Reading," *The Thirty-Sixth Yearbook of the National Society for the Study of Education*. (Part I, "The Teaching of Reading: A Second Report"), p. 25.

² *Ibid.*, p. 26. By permission of the publishers.

but also involve stages in the reading process. The child must recognize words and symbols before he can "get the thought" of these symbols. Furthermore there can be no critical evaluation of reading material until one "gets the thought" from the printed symbols. How much a mentally retarded child evaluates reading material is of course dependent upon his intelligence level.

Although mentally retarded children cannot reach the achievements of mentally normal children in the critical evaluation of reading materials, the teacher should keep in mind that these processes function in different degrees at different levels according to each child's intellectual and reading level.

Exercises and activities which aid comprehension and evaluation are given here.

Free Reading

Many simple stories with a variety of topics and varying degrees of difficulty should be provided in book form or pamphlets for the children in the classroom. Interesting stories with limited vocabularies of first- to fourth-grade levels can be purchased for this purpose.¹ This procedure is followed in classrooms where the library technique is utilized.

The children should be allowed to select any book they wish to read in school or to take home. They should not be forced to answer a variety of questions related to a book. Such procedure may halt their interest. However, some of the children may wish to talk about an interesting story they have read. They should be encouraged to discuss it with the teacher or with the other children. In this way the teacher will have a guide to their comprehension.

Free reading of stories for mentally retarded children will

¹ See bibliography of Children's Books in Appendix B.

not develop all the necessary skills. Usually, free reading creates interest in books and stories, develops concentration, and provides pleasurable experiences. Free reading stimulates comprehension since the child is reading to see what will happen next. Probably little evaluation and critical thinking exists with free reading activities.

Reading Directions or Answering Questions

Many projects and activities in classes for mentally retarded children encourage comprehension and evaluation of the reading materials. After the discussion of a project and of the manner in which it is to be executed the teacher may mimeograph or write out directions for the children. The children may then read the directions to find their individual parts in the activity. The directions may require modification or extension, depending upon the ability of the children. This introduces the process of evaluation and stimulates thinking about the reading material.

Another method is to write the story of a project and give correlated seat work in the form of questions and answers in order to determine what reading progress the children have made. Reading frequently may be integrated with all other activities.

Examples of Integration of Reading with Activities

Dr. Elise Martens¹ has compiled and published a series of group activities contributed by teachers in special classes for mentally retarded children. These activities consisted of projects on "Community Life," "The Food Market," "Foods for Boys," "Child Care," "The Nursery Party," "A Project in Manicuring," "Beautifying the Schoolroom," "Toy Tele-

¹ ELISE H. MARTENS, *Group Activities for Mentally Retarded Children* (Department of the Interior, Bulletin No. 7), pp. 1-146.

phones," "How We Send and Receive Messages," "United States Money," "A Natural History Museum," "A Study of Trees," "The Toy Orchestra," and "Books and Bookmaking." Each of these group activities involved some reading. Several of them will be described further.

"The Food Market" was a unit contributed by Elizabeth Kelly, of Newark, N. J. Miss Kelly felt that although children go to the store to purchase articles for their mothers, they do not become acquainted with the various items in the store. The activity consisted of arousing an interest in the project through discussions and a trip to the market. The children built a store and imitated what they had seen in the various stores at the market. The project integrated much of the work of the school since it included manual activities in building the store and acquiring goods to sell as well as activities in reading, language, literature, writing, numbers, music, art, physical training, nature, and health. Reading was an integral part of the project.

The children read the following:

A record of the work done in the activity by means of charts.
Signs, labels, and prices in the store.

The progress as set forth in the daily newspaper of the class.
Directions for individual work to be done.

The luncheon menu.

Materials in the library pertaining to the store.

Questions to be answered about the work of the activity.

Another activity, entitled "Books and Bookmaking,"^x contributed by Miss Martha MacDonald, of Pittsburgh, Pa., consisted of a unit of work in the construction of a book, binding it, and then reading its selections. In this book, entitled "Read and Do," the child was given directions in the construc-

^x ELISE H. MARTENS, *op. cit.*, pp. 121-146.

tion of the book. On the first page was written, for example:

Read and Do

Today you begin to make a BOOK.

It will be your BOOK.

In your book you will find lessons to READ.

In your book you will have things to DO.

Write your name in your book:

Name _____

Similar reading lessons were introduced for the child every day on a dittoed sheet of paper. He read the selection, then executed its directions. The activity of the unit consisted of cutting, pasting, drawing, and constructing the book, binding the book, making book ends, and making a library for the books. Reading activity surrounded this unit of work in the following forms:

Reading books and stories about books found in standard readers.

Reading the directions for each part of the unit.

Reading work-type materials in the form of true and false tests, multiple choice tests, and completion tests.

Reading and spelling new words based on the activity.

Reading and writing stories about the unit of work, and about authors.

Dr. Reiter¹ describes the integration of academic subjects with a unit of work and gives illustrations of how the same unit may be used to teach reading to low, intermediate, and advanced children in the same class. The "Home Project" which Reiter describes, provided information on planning, constructing, and furnishing a house, practical arts used in

¹ FRANK H. REITER, *Organization and Administration of Special Classes for the Orthogenic Backward* (Harrisburg, Pennsylvania: Department of Public Instruction, No. 85, June, 1935), pp. 38-44.

the building trades, household arts, family relations, as well as development of the tool subjects in connection with a concrete activity.

For the low division of the class, reading consisted of making a dictionary booklet of words taught through direct association with objects; and reading simple sentences composed by the children on the family, the home, furnishings, food, and clothing. Seat-work activities were provided with exercises of matching words and pictures, matching phrases and pictures, and directive reading such as "Draw a house and color it yellow."

The intermediate division of the class made booklets entitled "Our Home." Each booklet contained a series of stories on the function of the furniture, table manners, modern inventions in the home, and family relations. Since many of the intermediate group were beginning readers, the stories which they formulated orally were written on the board. After the children had read these from the board, they copied them in their booklets. The reading exercises were supplemented by seat-work which consisted of matching words and pictures, matching phrases and pictures, completing sentences, comprehension questions, classifying words, directive reading, and the like.

Each member of the higher division of the class made a full illustrated booklet of the project. The booklet, entitled "The Workmen on Our House," consisted of chapters on "The Work of the Contractor and His Plans," "The Work of the Plumber, his Tools and Materials," "Our Trip to the Brickyard," and so forth. The subject matter of each chapter was developed orally first, then assigned for written composition. When the children completed the composition, each read his in turn. The best one was selected by the pupils and written on the board. The children then copied the composi-

tion in their booklets and reviewed it as a reading lesson. Later, the children exchanged booklets for practice in reading the penmanship of others. The higher division, like the low and intermediate divisions of children, also worked on correlated seat-work to supplement the reading exercises.

The "Home Project" described here is an example of integration of a concrete "unit of experience" with purposeful and meaningful reading materials. It illustrates also the manner in which a "unit of experience" may be executed in an ungraded class of eighteen mentally retarded boys and girls ranging in age from eight to seventeen years and in educational abilities from low first grade to fourth and fifth grades. The young child in the class aided in whatever manner he could with the project and derived as much information and reading achievement as his capabilities allowed. Similarly, the older more advanced children accomplished what they could at a higher level of performance.

Vocabulary Training

To increase comprehension, mentally retarded children should be continually provided with reading materials and activities which will enlarge their reading vocabulary. These activities include the learning of new words and enriching the meanings of known words. Also, the activities given in Chapter III for language development should be continued. These provide for oral expression, enriching experiences, study of pictures, story reading or story telling by the teacher or children. An excellent method of increasing the children's vocabulary and enriching their experiences is derived from projects and excursions. Stories about these experiences may be written and then read by the children. One teacher working with a group of intermediate mentally retarded children brought her camera to school, took a picture of each child, and

developed the pictures in class. Each child wrote about his own picture and described the developing process. In that way the children enlarged their vocabulary in connection with a new and interesting project. Older and more advanced children can of course use the dictionary to look up words.

COMPETITIVE EXERCISES

Psychologists and educators agree that too much competition in the classroom may do more harm than good, although it does furnish an incentive for some children. It may be true that mentally retarded children will function better if they are successful in competition. Not everyone can be at the head of the class, however, and those who are at the foot suffer from the procedure.

If competition must be used as an incentive for further achievement among mentally retarded children, it is best that a child compete with himself. A child may read one book one week, mark it in his record book, then best his record by reading two books the next week, and three the third week. Many children like to best their own records, and there is no harm in such procedure. In many cases it may furnish an incentive for accuracy in reading.

AIMS IN TEACHING ADVANCED READING

Advanced reading for mentally retarded children is similar to that offered in the third, fourth, and fifth grades of the regular school. Few mentally retarded children with IQ's between 60 and 75 advance further than the fifth grade. For the most part they remain between the third and fifth grade, hence, this level may be considered advanced reading for mentally retarded children.

By the time the retarded child has reached the third-grade reading level, he has attained a fair degree of reading ability. He has read a number of books with simple vocabulary, has become interested in reading, has developed methods of word-recognition, is reading a great deal silently and without obvious lip reading, and has increased his speaking and reading vocabulary.

For advanced reading instruction the teacher should endeavor to accomplish the following:

1. Increase the experiences of the child through wide reading.
2. Stimulate reading for information and pleasure.
3. Increase the child's ability to recognize new words in oral and silent reading.
4. Increase the child's speed and comprehension in reading.
5. Increase the ability to understand increasingly difficult words, phrases, and entire selections.
6. Stimulate the reading of newspapers and magazines, and encourage other adult reading activities.

METHODS OF TEACHING ADVANCED READING TO MENTALLY RETARDED CHILDREN

Most of the approaches to reading utilized with mentally normal children in the third, fourth, and fifth grades are applicable to the mentally retarded child at the corresponding level of achievement. The main difference is that adult activities will be given more extensively to the mentally normal child because he will reach a higher level of attainment. It would be futile to prepare mentally retarded children for appreciation of better literature and technical scientific materials since these children will not attain the level of literary appreciation or scientific thinking reached by mentally normal adults.

ollowing emphasis should be given in teaching reading to mentally retarded children.

ntinue efforts to enlarge their reading vocabulary. Readers and work-type materials provide for such instruction. The methods for increasing vocabulary and comprehension given in the earlier part of the chapter are applicable

ovide for recreational reading by stimulating interest in books. Book clubs can be formed, and each week in class can relate an interesting story he has read.

ovide for instruction in the use of the dictionary, the table of contents, the index, and the methods of finding and withdrawing books from the library.

ovide for continuation of methods of word-recognition—text clues, visual and phonic analysis, and the use of suffixes and prefixes.

ovide for increase in speed of silent reading and for improvement in study-reading. Special exercises may improve accuracy, and independence in word-recognition.

tegrate reading with the social studies, arithmetic, and activities of the classroom which are not a part of the lesson.

ovide for instruction in reading newspapers and popular magazines within the children's level of comprehension. Early reading the comic strips attract their attention. Other features of the daily newspaper can be utilized. Older mentally retarded children read the newspapers and appear to keep abreast of the news. Newspapers are always used with mentally normal children in the third, fourth, and fifth grades. Nevertheless mentally retarded children who are from thirteen to sixteen years old and can read at this reading level should be given instruction in reading newspapers and magazines. They have no other opportunity

tunity for instruction since their school days are nearing an end. The normal child has more time to learn and will later reach a higher level of reading attainment.

8. Provide for instruction in the use of time-tables, graphs, road maps, telephone books, city directories, and other reference materials used by the average adult. Many of these reading activities can be accomplished through projects and activities. Many mentally normal children learn these incidentally, but mentally retarded children may require specific classroom instruction. This is reading in preparation for life.

9. Provide for individual differences and for individual difficulties. The teacher should always be alert to determine whether or not the child is developing in all phases of reading. If he is backward in one phase, exercises should be introduced to improve that weakness.

Many exercises and work-books have been prepared to give children further practice in reading for comprehension. Some of these are:

1. *Gates-Peardon*¹ *Practice Exercises in Reading* are devised to help the child to appreciate the general significance of a selection, to predict the outcome of given events, to understand precise directions, and to note details.

These exercises tell a story, then provide questions, and instruct the child to check the proper answer. Books for grades 2 to 8 are provided.

2. McCall and Crabbs² *Standard Test Lessons in Reading* for grades 2, 3, 4, and 5 provide stories and questions, to be read and answered in three minutes.

¹ ARTHUR I. GATES and CELESTE PEARDON, *Practice Exercises in Reading*, Bureau of Publications, Teachers College, Columbia University.

² WILLIAM A. MCCALL and L. M. CRABBS, *Standard Test Lessons in Reading*, Bureau of Publications, Teachers College, Columbia University.

3. Stone's ¹ *Silent Reading*, a series of readers for grades 2-7, give a series of exercises in the form of directions to make or build something, riddles to answer, and the like.

THE RETARDED CHILD IN THE ELEMENTARY GRADES

It has been stated before that most mentally retarded children are not in special classes but in the regular grades of the elementary school. Such backward and retarded children are far below average in reading ability. They are considered laggards, or lazy children, because they are unable to keep up with the requirements of the grade.

An example of this type of child is found in the case of Alice. Alice was a twelve-year-old child with an IQ of 65 and a mental age of seven years and ten months. Her reading ability was approximately the middle second-grade level, or normal for her mental age. She had attended the regular elementary school since the age of six, and after repeating several grades was promoted at the age of twelve to the fourth grade with nine and ten-year-old children.

Alice could participate with her classmates in many of the non-academic activities, and because of her age and physical superiority was able to lead in some of the recreational activities. She also tried to read the fourth-grade books but they were too difficult for her. In the academic activities of the classroom she lagged behind the other children.

An elementary school teacher can do much to increase the retarded child's efficiency in reading though the curriculum of the class does not provide for elementary instruction in reading. In a fourth-grade class such as Alice's most of the children have learned a method of word-recognition. They are

¹ CLARENCE R. STONE, *Stone's Silent Reading Series*. Houghton Mifflin Company.

reading rapidly, silently, and with comprehension. Alice has not developed an efficient method of word-recognition. She sometimes uses her lips in silent reading in an attempt to recognize words and to understand the assignment. She is a slow reader and invariably fails to complete the reading lesson. As a result she does not obtain as much information from books as other children.

Suggestions for increasing the retarded child's efficiency in reading in the elementary grades are given here.

1. Many of the suggestions given on pages 104 to 106 are applicable to the retarded child in the upper grades. The teacher may find another child in class who could give the retarded child some individual help in reading. Furthermore, the teacher should give the retarded child every opportunity to do tasks in which he can excell.

2. The child can be aided in developing an independent and efficient method of word-recognition. This may be accomplished by teaching the child a phonic method, syllabication, and context clues.

3. The child may be given books with a reduced vocabulary but with materials similar to those of the advanced books used by the class. In this way the retarded child may read about Lincoln or Washington from a simple book, while the other children read about the same men from a more advanced social science book.

4. Any project or activity in which the retarded child participates should be used to increase his vocabulary, to broaden his comprehension in reading, and to increase his reading efficiency. If the children in a class are instructed to write a composition about some experience, the retarded child can do likewise with, of course, more guidance from the teacher or some other pupil.

5. Recreational or free reading should be encouraged. The

teacher should provide the retarded child with interesting books which have a reduced vocabulary within the child's ability.

SUMMARY

To increase efficiency in reading with mentally retarded children the following suggestions are offered:

1. A method of word-recognition should be taught.
2. Phonics and context clues aid word-recognition. Mentally retarded children are deficient in generalizing ability and have difficulty in developing a method of word-recognition. Methods of teaching phonics and context clues are described.
3. Silent reading should not be introduced too soon to mentally retarded children. Oral reading should be prolonged since it aids learning and gives the teacher a guide to the methods of reading the child is using.
4. Interesting reading materials for mentally retarded children are difficult to obtain since most elementary books are written for younger mentally normal children. The retarded child should be given reading materials with elements of surprise, liveliness, and animalness. These materials must be simple enough to insure mastery on the part of the child.
5. Comprehension of reading materials should always be stressed. The reading program should include free reading, reading directions and answering questions, correlating project work, and increasing the reading vocabulary of the mentally retarded child.
6. Mentally retarded children who read at the third, fourth, and fifth-grade levels, can be given reading programs similar to those of the corresponding regular grades. Interest in recreational reading, and in the use of newspapers, timetables, directories, maps, and the like, should be developed before the child leaves school.

Reading Defects in the Mentally Retarded

WHEN A MENTALLY retarded child fails to learn to read on a level with his capacities he is considered a reading disability. Such a child is described in the following case study.

Harry entered school at the age of six. After three years in the first grade he was given a psychological examination. His IQ was 68 and he was sent to a special class for mentally retarded children. After four years of instruction in the special class Harry was referred to a psychological clinic because he was still unable to read, yet was able to do third-grade arithmetic. The examinations gave the following results: On the Stanford Binet Intelligence Examination he obtained a mental age of 9-0. Since his age was 13-6, his IQ was 67. On the Stanford Achievement Arithmetic Computation test (without reading) he scored a grade of 3.4. On several reading tests he scored at the first-grade level. According to Harry's mental age he should have been reading at the third- or fourth-grade level, and his arithmetic ability indicated that he was capable of learning things that did not involve reading.

After further diagnosis it was decided that, although this child was mentally retarded, he could be considered a reading disability case and that with proper training he could learn to read. He was given intensive individual remedial instruction for four months and then allowed to continue with classroom

work. At the end of the year he was reading at high third-grade level according to the judgment of the teacher and the results on reading tests.

Many children in special classes and in the regular grades are allowed to mark time without learning to read. Teachers sometimes believe the child incapable of learning because of mental retardation. Hegge, Sears, and Kirk¹ have estimated that five to ten per cent of mentally retarded children are educable reading disability cases. This corresponds to the estimates of the frequency of reading disabilities found among mentally normal children.

CONCEPTS OF READING DISABILITIES

Many terms have been used by various authors to designate the inability to learn to read. Terms such as "word blindness," "alexia," and "dyslexia" have been used to denote some cortical deficiency which rendered the individual incapable of learning to read. The term "stereosymbolia" has been used to imply an inability to learn to read due to a lack of cerebral dominance. These terms all imply some cause or reason for the disability.

Many psychologists prefer to use the term "reading disability" or "reading defect" to connote the inability to learn to read in harmony with the individual's other achievements and capacity. This term is preferable because it does not imply the knowledge of a causal or etiological factor.

Monroe² has evolved a clinical and objective method of determining whether or not a child is a reading disability case.

¹ THORLEIF G. HEGGE, R. SEARS, and S. A. KIRK, "Reading Cases in an Institution for Mentally Retarded Problem Children," *Proceedings of the American Association for the Study of the Feeble Minded* (May, 1932), pp. 149-212.

² MARION MONROE, *Children Who Cannot Read*, Chapter II.

The method applies alike to mentally superior, mentally normal, and mentally retarded children. Figures 5, 6, and 7 with the accompanying explanations give a graphical representation of the relation of reading to other factors.

EDUCATIONAL PROFILE

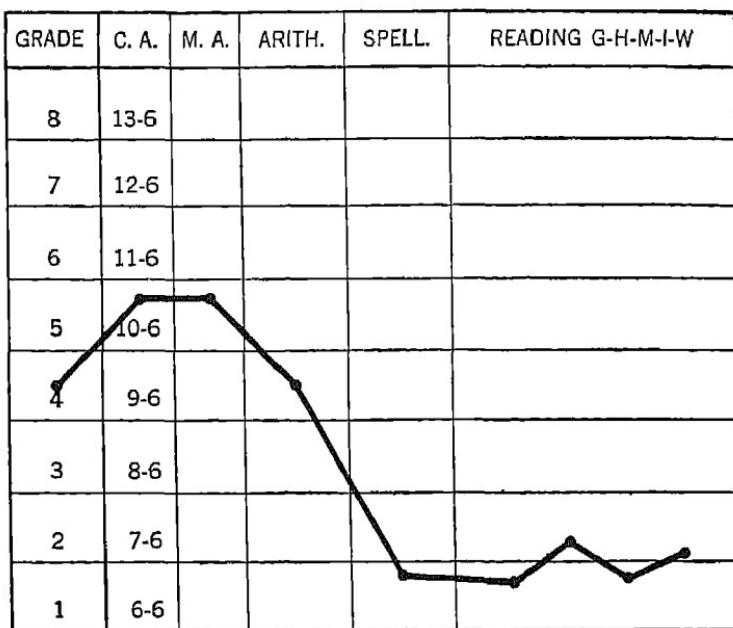


FIGURE 5

Case A. Case A is a fourth-grade boy, ten years and eight months old. He has an IQ of 100 and a mental age of 10-8. In arithmetic computation he is in the fourth grade. In reading and spelling he is in high first or beginning second grade. The average child with an IQ of 100 and a mental age of 10 is usually in the fifth grade in reading. This boy's reading ability is three years below his mental capacity, and he is therefore considered a severe case of reading disability. The arithmetic computation grade indicates that in a subject unrelated to reading he has made considerable progress. It appears from the educational profile that his disability is specific to reading.

Case A shows a mentally normal child who is average in all tested abilities with the exception of reading. Case B shows a mentally retarded child whose reading, although low for his chronological age, is on approximately the same level as his other tested abilities. He cannot be considered a reading

EDUCATIONAL PROFILE

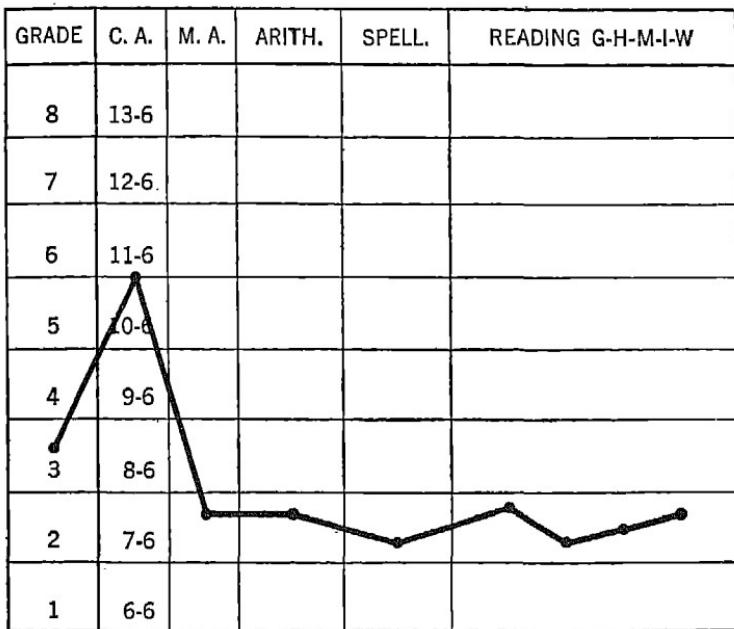


FIGURE 6

Case B. Case B is a boy who is placed in the third grade, although he is 11 years old. His mental age is 7-8 giving him an IQ of 70. His arithmetic is also at the second-grade level. On spelling and reading tests he scored second grade. Children of 7 years and 8 months are expected to be in the second grade. Therefore, although this boy is retarded in reading as compared to his calendar age, he is not considered a reading disability case because his mental capacity does not warrant more than second-grade reading achievement.

disability case. Case C is a mentally retarded child whose reading ability is far below his mental age and arithmetic computation achievement. He is considered a reading disability case.

EDUCATIONAL PROFILE

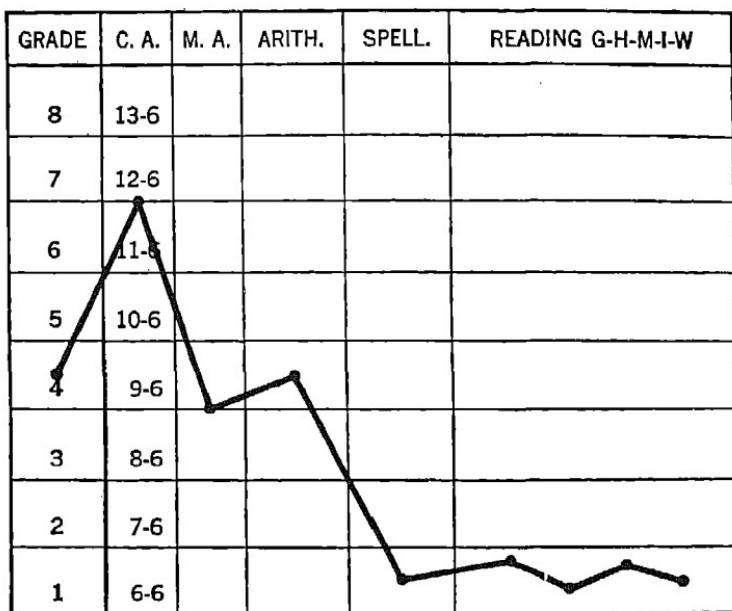


FIGURE 7

Case C. Case C is a 12-year-old boy with an IQ of 75 and a mental age of 9 on the Stanford-Binet. He has been promoted to the fourth grade because he is capable of fourth-grade arithmetic. His reading and spelling are consistently in the first grade. Although this boy is mentally retarded, he is considered a reading disability case because his mental age and his arithmetic warrant fourth-grade achievement. His reading ability is two and one half years below his other capacities.

A METHOD OF DIAGNOSIS FOR THE USE OF
CLASSROOM TEACHERS

In the preceding section it has been shown that some mentally retarded children have reading disabilities. The classroom teacher can detect such children and correct their disabilities, unless their reading defects are so extreme that the services of a clinician are required. It should be remembered, however, that special classes for mentally retarded children are usually small, consisting of fifteen to twenty children. Special classes have been reduced in size to enable the teachers to give individual attention to the children. Consequently much remedial reading work can be done in a special class if it is properly organized. Both in the special class and in the regular grades the retarded child will require individual instruction.

The following procedure is suggested to aid teachers in making a diagnosis of reading defects.

The Diagnosis of Mental Ability

The first step in any diagnosis of a reading disability case is to determine the mental age level. Although the mental age is not a perfect indication of reading capacity it is probably the best single indicator extant.

Group intelligence tests that include reading should never be given to children with a reading handicap. Rather, an individual intelligence test such as a Stanford-Binet¹ should be used with the child since it includes few tests involving reading.

Since most teachers are not trained in psychological diagnosis they should ask for individual mental tests. In most

¹ LEWIS M. TERMAN and MAUD A. MERRILL, *Measuring Intelligence*, pp. 3-411.

school systems retarded children have usually been tested by a psychologist. If this has been done the results may be used unless the tests were given several years previously. One caution should be observed in utilizing a mental test given in past years. The child has since developed and consequently has increased in mental age. To determine the up-to-date mental age, the teacher may apply the formula

$$IQ \times CA = MA$$

In determining an up-to-date MA, the IQ of the child is assumed to remain constant. The CA is known. By multiplying the IQ by the CA a corrected MA may be obtained. To illustrate: A child was given a psychological examination October 1, 1938. He was then twelve years old. On the intelligence test he obtained a mental age of nine and an IQ of 75. The teacher wanted an estimate of the mental age October 1, 1939. The child was then thirteen years old. Assuming that the IQ remained at 75, the figures were substituted in the formula, 13 for the CA and 75 for the IQ. The following estimate was obtained:

$$\begin{aligned} .75 \times 13.0 &= MA \text{ or,} \\ .75 \times 13.0 &= 9.75, \text{ or 9 years and 9 months} \end{aligned}$$

The Diagnosis of Reading Ability

After the mental age has been determined the teacher should estimate the reading ability of the child. This estimate should be supported by the results of reading tests. Several types of tests may be used since many of them usually measure only one or two aspects of reading. Since most of the children will be at the primary reading level, they may be given the following tests¹: Gates Primary Reading Tests or Reilley's Primary

¹ See Appendix C for description of tests.

Reading Test, Gray's Oral Reading Paragraphs, and the Monroe Iota Word Test or the Gates Graded Word Test. The grade scores on these tests may then be averaged and compared with the mental age.

If a child with a mental age of eight or nine years, reads at the level of first or second grade, he may be considered a reading disability case. A mentally retarded child with a mental age of 9-9 should be reading at least at the third-grade level and possibly at the fourth- or fifth-grade level. (See Table 13.) If his reading is at the first- or second-grade level, he is sufficiently below his mental-age reading-grade capacity, that is, the reading grade expected for the mental age, to warrant special attention in reading.

Table 13 shows the mental-age reading-grade expectancies. From this table the teacher may estimate the approximate grade at which the child should be expected to read.

TABLE 13. READING GRADES EXPECTED FOR VARIOUS MENTAL AGE LEVELS

MA	Reading Grade to Expect
6-6	1st grade
7-6	2nd grade
8-6	3rd grade
9-6	4th grade
10-6	5th grade
11-6	6th grade
12-6	7th grade
13-6	8th grade

The Diagnosis of Other Abilities

The third step is to determine the other abilities of the child. As one indication of learning ability Monroe¹ uses the arithmetic computation grade obtained from tests that require no reading. If the arithmetic computation grade is higher than

¹ Op. cit., pp. 12-13.

the reading grade, it is another indication that the child is capable of learning and that the disability is specific to reading.

Since many schools do not give arithmetic computation instruction but teach arithmetic in a life situation, some children may score low on arithmetic computation tests although they are capable of arithmetical reasoning in a life situation. The teacher, therefore, should give informal tests to determine the child's arithmetical abilities.

In addition to estimating the arithmetical abilities the teacher may estimate how emotionally mature the child is, what motor, mechanical, and social abilities he has. The aggregate result indicates whether or not the child's capacity to learn is greater than his present achievement.

The Diagnosis of Symptoms and Causes

The first three steps in the diagnosis answer the question, "Is the child's reading ability below his other capacities?" The fourth stage in the diagnosis is to discover *why* the child is retarded and also what abnormalities in reading have been developed. Among the causes suggested for reading disability are visual defects, auditory defects, left-handedness, and other organic factors. There has been much research to discover causes of reading disability. Most authorities agree that seldom does one factor operate to cause a reading defect. Usually there is a composite of factors.

Some of the causes summarized by Gates¹ are:

1. Organic difficulties such as so-called word blindness or strephosymbolia.
2. Left-handedness and left-eyedness.
3. Psychological deficiencies such as visual and auditory discrimination.

¹ ARTHUR I. GATES, *The Improvement of Reading*, Chapter I.

4. Mental immaturity or low mental age.
5. Lack of reading readiness.
6. Unfortunate forms of motivation.
7. Failure to acquire essential techniques.
8. Ineffectual types of teaching.

Much research has been conducted on the organic causes of reading disabilities. The effect of factors such as word blindness, strephosymbolia, left-handedness, and auditory and visual defects has not been substantiated by research. At the most they are minor causes of a reading disability.

The effect of environmental factors such as lack of motivation, lack of reading readiness, poor teaching, and the like, is substantiated by the fact that when proper remedial instruction is instituted children learn to read although the physical deficiencies remain.

Types of Poor Reading

In addition to determining the causes of the reading disability the teacher should attempt to discover symptoms of poor reading that are exhibited by the child, such as the following:

1. Inability to attack new words.
2. Inability to blend sounds.
3. Inability to use context clues.
4. Slow word reading.
5. Lack of comprehension in reading.
6. Reversal errors in reading.
7. Omitting words and sounds.
8. Lip reading in silent reading, and the like.

Through observation and diagnosis of symptoms of poor reading, a remedial program may be outlined.

METHODS OF REMEDIAL INSTRUCTION

Numerous methods of remedial instruction have been proposed. Few of these methods have been applied to mentally retarded children although some data have referred to these children.

In the following, a description will be given of the remedial methods of Fernald, Monroe, Gates, and Hegge and Kirk.

The Fernald Kinaesthetic Method of Remedial Instruction

Fernald¹ has utilized a kinaesthetic factor in teaching mentally normal children to read after they have failed to learn during a number of years in school. Her method consists of four stages² as follows:

Stage 1. The child learns by tracing the words. First, the teacher writes the word on paper in plain blackboard size script, with crayola. The child then traces the word with finger contact, and says each part of the word as he traces it. He repeats this process until he can write the word without looking at the copy. He writes the word once on scrap paper and then in the "story," which is constructed from his experience. After a story has been completed and read, it is typed for the child so that he may read it in print.

Stage 2. This is the same as Stage 1, except that tracing is no longer necessary. The child is now able to learn any word by saying it over to himself, provided it is written for him as in Stage 1. He continues to write freely and to read the typed copy of what he has previously written.

¹ GRACE M. FERNALD and H. KELLER, "The Effect of Kinaesthetic Factors in the Development of Word Recognition in the Case of Non-Readers," *Journal of Educational Research* (December, 1921), pp. 355-377.

² GRACE M. FERNALD, "On Certain Language Disabilities," *Mental Measurement Monograph* (August, 1936), pp. 8-10.

The length of the tracing period varies greatly with the individual child. If left to himself, he soon discovers that he is able to learn without the tracing which was at first necessary.

Stage 3. The child is able to learn from the printed word by saying it to himself before he writes it. The child learns directly from the printed word without requiring the teacher to write it. Many children eventually acquire the ability to glance over words of four and five syllables, say them once or twice, and then write them without a copy. This occurs at a stage when the child still reads poorly and sometimes fails to recognize even simple words after he has been told many times what they are.

At the third stage the child begins to want to read from books. This should be encouraged. He should be given books and told words he does not know. When the reading of a selection is finished the new words are reviewed and written, and later checked to insure their retention by the child.

Stage 4. Here, the child is able to recognize new words from their similarity to words already learned. After the child has learned from the printed word, he begins to generalize and to recognize new words from their resemblance to words he already knows. He should become eager for reading materials. When the child has gained sufficient reading knowledge he should be returned to the regular class. By this time the remedial teacher should have (1) supplied enough reading to develop concepts which will aid the child in recognizing new words from their similarity to ones which have been experienced in other combinations, (2) developed the child's reading vocabulary, adequate for the comprehension of the materials to be read, and (3) taught the child to apperceive the meaning of word groups in the reading of any new content.

Fernald states that it is difficult to complete the last stage satisfactorily unless it is skillfully handled. She found that

many teachers complete the first stages of training a reading disability case with enthusiasm and little difficulty, but expect some miracle to complete the final processes and give the child flexible, immediate recognition of various word groups in all the combinations in which words occur in books. Many failures, states Fernald, occur because the child is not given the wealth of experience necessary for intelligent and rapid reading. She cautions against the practice of stopping remedial instruction before the child has reached a satisfactory degree of reading ability.

Fernald¹ has used the kinaesthetic method with non-readers and poor readers including college students. In her recent publication she reports phenomenal progress for a number of children. For one group of twenty-six non-readers she reports almost four years of progress in less than seven months of training. For another group of fourteen children with a partial disability she reports 2.4 grades' progress in an average of 6.2 months. All the children were of average or superior intelligence.

Monroe's Method of Remedial Instruction

Monroe² utilizes a phonic approach for the training of some types of reading defects. Her diagnosis consists of analyzing the errors in reading to determine whether the child makes the greater number of errors in (1) faulty vowels and consonants, (2) reversals, (3) addition and omission of sounds, (4) substitution of words, (5) repetitions, (6) addition and omission of words, or (7) refusals and words aided.

When the diagnosis is complete and the symptoms of poor reading are discovered, remedial training is instituted. Mon-

¹ FERNALD, *op. cit.*, pp. 19-32.

² MARION MONROE and BERTIE BACKUS, *Remedial Reading*, Chapter 3.

roe's method is sometimes characterized as a phonic-tracing method. She says:

We tried to teach the children who had trouble in learning to read to utilize the possible secondary or vicarious steps in word-recognition which are not usually presented in ordinary instruction. For example, the child whose visual discriminations were precise for small patterns, such as letters, but not for large ones, such as words, was taught by a method which began with the small units and built up the larger ones gradually. The child who had trouble in recognizing the spatial orientation of patterns was taught to use a manual cue to give the position of the pattern. The child who failed to discriminate precisely the sounds of words was taught the movements of placing the speech organs to obtain the desired sounds and hence to rely on the kinaesthetic cues of articulation rather than on audition. The child who had difficulty in recalling an auditory symbol (the word as heard) when presented with a visual symbol (the word as seen) was taught to associate each with the same overt response, and hence to build up the desired association by a secondary link. The child whose motor control of the eyes was inaccurate for keeping the place of reading was taught to utilize a combination of eye-and-hand movement in developing the desired habit.¹

Monroe gives suggestions for correction of each of the child's reading errors.

For faulty vowels and consonants, she suggests specific drill, beginning with simple discriminations and progressing to more complex discriminations. Auditory discrimination of the sound is established before the symbols are presented.

Monroe and Backus cite an example of this method.

Purpose: To correct a persistent confusion of *sh* and *ch*, as shown by frequent errors such as *much* read *mush*, *which* read *wish*, etc.

Teacher: I have noticed that the words which bother you fre-

¹ *Op. cit.*, pp. 111-112. By permission of the University of Chicago Press publishers.

quently contain the letters *ch* or *sh*. I believe that it will help your reading if we will take a little while to study these letters and sounds particularly. Listen while I pronounce *sh*. It sounds *sh---*, like that; a soft, long-drawn-out sound. We can keep on saying it as long as we have breath. Now listen while I pronounce *ch*. It sounds *ch*, like that; a sharper and shorter sound than *sh*. Say each sound and see if you can hear the difference. I am going to pronounce a number of words that contain *sh*. See if you can hear the sound in each word: shoe, shed, ship, dish, hush, fish, washing, fishing, etc. Can you think of other words that contain this sound? (Children suggest words.) Now I am going to say words that contain the *ch* sound: chair, chin, chop, rich, much, catching. Can you think of others? (Children suggest words.)¹

Then words containing *ch* and *sh* are presented such as:

shut	children
ship	cheek
dish	catch
smash	much

Later sentences such as the following are given for seat work:

The boy went to the forest to __op some wood.

Please do not eat too mu__.

Do not drop the di__...²

For reversal errors, that is, changing the direction of reading by transposing the sequences of letters within a word, such as reading *farm* for *from*, or transposing the sequence of words within a sentence or confusing such letters as *b*, *d*, *q*, *p*, and so forth, Monroe recommends a kinaesthetic cue to direction. This allows the child to trace the words as he writes. Reversals may also be overcome by sliding a pencil along the line

¹ *Op. cit.*, p. 51. By permission of Houghton Mifflin Company, publishers.

² *Ibid.*, p. 52. By permission of Houghton Mifflin Company, publishers.

as the child reads. Reversible words such as *form*, *from*, and the like, may be presented for drill.

Additions and omissions of sounds consist of reading *trap* for *tap* or *tap* for *trap*. To overcome these difficulties the teacher should instruct the child to sound and read such words as *tap*, *trap*, *back*, *black*, *sad*, *sand* and the like. The teacher may also introduce multiple choice sentences such as "The fox was caught in the (tap, trap)."

Another reading error is the substitution of a word completely different from the word in the text, but a word which may be related in meaning, such as *rooster* read as *hen*. For this type of difficulty Monroe recommends drill on context clues with simple sentences in which the child knows all the words but one.

Repetition of words or phrases in reading delays reading speed and interferes with fluency. Repetitions occur usually as a result of other errors, or when the child encounters words he does not know, or when the text is too difficult. Concert or choral reading, following the line with a pencil, and reading easy materials are methods suggested for the correction of this difficulty.

Addition and omission of words consist of inserting words in the text or skipping words and omitting lines. If these errors do not disrupt the meaning they are not serious. For remedial methods choral and concert reading are suggested.

Refusals and words aided consist of inability to attack a word. Substitution of simpler reading materials and an independent method of word recognition are suggested as remedial measures.

In addition to presenting exercises to correct errors in the mechanics of reading Monroe discusses the use of oral reading, silent reading, recreational reading, speed of reading, and methods of increasing interest in reading. Many additional

supplementary devices are utilized to teach the child to read.

Gates¹ Method of Remedial Instruction

Gates employs a number of methods in the training of reading defects. For extreme cases he criticizes Monroe's and Fernald's methods for the correction of reading defects, and substitutes a visual method.

The Gates method of remedial instruction for extreme cases of reading disability consists primarily of a visual approach to word-recognition. One method utilizes a picture-word association technique which was effective with teaching deaf-mutes to read. He utilizes carefully prepared materials of various types, many of which are designed to foster constructive, artistic, dramatic, and other enterprises. In these materials the pupil is required to recognize the words on the basis of general configuration and some differentiating characteristics. Speed in word-recognition is fostered by graded repetitions of the words in various contexts. The writing or kinaesthetic factor emphasized by Fernald and Keller and the sounding method utilized by Monroe are not used. Gates admits, however, that in some cases a writing or phonetic method is necessary.

For extreme cases of reading defects Gates asserts:

The writer and his students have employed with disabilities a method which gives particular prominence to experiences in visualizing — or recalling in the "mind's eye" — the appearance of a word as a whole and part by part. This plan was developed from investigations of spelling in which it appeared that practice in visualizing words helped not only to fix their appearance in mind but also served to produce a better technique of observing words. Just as attempts to recall or recite a piece of prose or verse or a

¹ ARTHUR I. GATES, *The Improvement of Reading*, pp. 441-452.

series of nonsense syllables tend to give birth to better techniques of learning by rote than do mere reading and rereading without active recall, so efforts to recall the look of the word may tend to produce a more effective way of seeing words one wishes to recognize later.

The method differed from the preceding one by asking the pupil to close his eyes and "see in his mind's eye" the word he had observed. He was encouraged to see it part by part, in the left-to-right order, and then as a whole. If the word could be divided into syllables, he was asked to say the syllables softly to himself, while visualizing them simultaneously. Later, as he learned to write, he was asked to visualize the syllables as he wrote and sounded them.¹

Gates however recommends a combination of all methods to be used in the correction of a reading defect.

The Hegge-Kirk Remedial Method

The Fernald, Monroe, and Gates methods have been used primarily with mentally normal children. Hegge, Kirk, and Kirk² have devised a method which was used primarily with mentally retarded and dull-normal children.

The Remedial Reading Method described by Kirk³ is in the initial stages primarily a phonic method, which differs from the conventional phonic systems in its completeness, and in its emphasis on certain principles of learning and retention. He states that the present-day experiments and discussion on phonics are not usually applicable to the individual treatment of reading defects, but rather have been used for the classroom teaching of the normal child, that is, either normal in intelli-

¹ GATES, *op. cit.*, pp. 451-452. By permission of The Macmillan Company, publishers.

² THORLEIF HEGGE, SAMUEL A. KIRK, and WINIFRED KIRK, *Remedial Reading Drills*, pp. 1-58.

³ SAMUEL A. KIRK, *Manual of Directions for Use with the Hegge-Kirk Remedial Reading Drills*, pp. 11-14.

gence or in reading for his mental capacity. The method has proved successful with children who had failed to profit from various conventional school methods over a period of years.

The Remedial Reading Drills are described as follows:

Gross organization of drills. The drills are divided into four parts. Part I includes the most frequent sounds, namely the sounds of the consonants, the short vowels, and the sounds of *ee, sh, oo, ch, tch, ar, ay, ai, or, old, ea, oa, ck, ow, ou, ing, all, ight, th, wh, qu, er, ir, ur, and final e.*

Part II consists of certain combinations of sounds previously learned in isolation: *an, in, un, en, on, ink, ank, unk, ang, ong, ung, and, ound, est, ill, ell,* and consonant combinations.

Part III consists of more advanced and less frequent sounds presented in word wholes: *Jaw, Paul, new, took, find, boy, boil, muddy, badly, little, seemed, asked, age, ice, city, fancy, taught, ought, protest, other, return, before, defend, prevent, pension, addition, plantation, solution.*

Part IV includes some supplementary exercises consisting of exceptions to sounds presented in the drills, configurations not previously taught, word building exercises, and exercises on sounds whose letters are frequently confused, such as *b, d, p, m, n.*

Organization within the drills. Instead of being arranged in columns, the words are printed in lines reading from left to right for the purpose of developing dextral eye movements at the outset of training. This is necessary because of the great number of cases who have a tendency to read from right to left.

In Parts I and II the sound units are separated so as to facilitate perception and discrimination. This procedure also indicates to the child that the letter or letter group is the unit and not the complex word or sentence which has previously frightened him.

Drill I is fairly representative of the organization of the drills. It included words having the short vowel *a* (as in cat) and most of the consonants. It is divided into four parts which are arranged in a systematic order according to the following principles.

The first part of Drill I is very simple in that within each line only the initial consonants differ from that of the following word, thus:

s a t	m a t	r a t	etc.
c a p	s a p	m a p	etc.

Thus the child is confronted, not with two totally different words but with similar words differing only in the initial consonant. The reason for this beginning is evident when one considers that the child must start with the units which are most easily acquired, rather than with the units which are most frequent in the language.

The second section of Drill 1 is a similar presentation of a different problem, using much the same words:

s a t s a p S a m etc.
m a p m a n m a d etc.

In this section the words have been arranged in such a way that only the final consonant in each word changes. This is necessary because after reading the first section some children may learn to disregard the last sound. This arrangement introduces a different approach for both the visual and oral response.

In the third section the problem of sounding and blending is slightly more complex, in that both consonants are different in consecutive words, although for the most part the same words are used as in the first two sections:

s a t m a n f a t t a n etc.

In the fourth section the same words are repeated again, but the letters are spaced more closely, and the child is now approaching normal word reading, although still by the phonic method. The fourth section is as follows:

sat cap rag can etc.

Whenever possible every drill in Part I follows this general method of construction. Drill 2 is similar to Drill 1 with the exception that the sound of short *o* (as in hot) is presented instead of short *a* (as in cat). Drill 3 is a review of both *a* and *o* and incidentally of the consonants. Drill 4 introduces the sound of short *i* as in sit (and Drill 5 reviews *a*, *o*, and *i*).

By the time Drill 7 is reached the child has already had much repetition of the consonants and of the four short vowels, *a*, *o*, *i*, and *u*.

Drill 8 introduces the sound of *ee* as in k-*ee*-p. Because one of the principles of the system is the progression from material of easy acquisition to that of more difficult, the sound of *ee* is intro-

duced in Drill 8 instead of the short vowel *e* (as in set) which is difficult for most children. The sound of *ee* is presented as a configuration, separated from the consonants so that a child will learn to respond to *ee* as a whole, and not by any rules which he must learn. The words are presented thus: *d-ee-d*, *f-ee-d*, etc. The symbol *ee* is presented as a sound in itself in the same way as short *a* was presented as a sound in Drill 1. Furthermore, the same system of changing only the initial consonant, then only the final consonant, etc., is continued. Other common configurations such as *ay*, *oo*, etc., are next presented in successive drills.

Review drills are introduced frequently for several reasons. The first is to give the slow learner further drill on the sounds he has learned without going back, and the second is the presentation of various sounds in the same drill, which is more complex than the presentation of only one sound in each drill. The review drills are probably the most essential part of the drills because they require the differentiation of sounds that have been learned in a different setting....

Part II presents words in a slightly different manner. Instead of reading the word hand as *h-a-n-d*, the child is now requested to read the words thus *h-an-d*, *s-an-d*, *w-en-t*, etc. Part II is devoted to many of the same sounds that occurred in Part I but here they are presented in such a way as to increase facility in sounding. The reason for this arrangement is to increase the unit of response, for the final aim is smooth reading, after first teaching the reading of words, then phrases and finally sentences.

Part III is for more advanced children who have gone through the first two parts and who are now reading by sounding words very rapidly. They are required to read all the new words in syllables or as wholes.

Part IV presents supplementary exercises and certain sounds which could not be systematically presented in the drills. These exercises may be used with children who are having particular difficulty with certain responses, such as the confusion of *b*, *d*, *p*, or *m*, *n*.¹

¹ Loc. cit.

The Type of Case to which the Remedial Reading Drills May Be Applied

The method of remedial training described is not a general method of teaching reading to all children or to children in the higher grade levels. It is applicable to clinical reading cases who have failed to learn to read after a number of years in school. The following general principles should be kept in mind when this method of treatment is to be used.

The method is applicable to cases whose reading status is only first, second, or third grade. It is not a remedial method for retarded readers in the higher grades.

The child must be a reading case; that is, there must be a discrepancy of approximately two or more years between his reading grade and that grade expected from his mental age.

Any extreme visual or auditory deficiencies must have been corrected.

Sounding: A child must be trainable in sound blending. A deficiency in this ability may not be very frequent, but about two per cent of the cases which have come to the writer's attention have been unable to learn to blend sounds after prolonged training.

Motivation and co-operation: the child must be willing to learn and must develop co-operation. It should be remembered that at the outset of training or in the classroom many children have appeared unco-operative and uninterested. In many cases after they had achieved some degree of success they co-operated splendidly. Several children, however, due to an extreme emotional reaction toward any type of teaching continued to show poor co-operation. The present method is probably not applicable to psychopathic or neurotic children who are unable to pay attention, and who do not appreciate progress. Usually a child who has been in school and who has failed to learn is very conscious of his disability and any method which shows him success is likely to be accepted whole-heartedly.

The child must lack the perceptual motor abilities developed by the drills. For example, a reading case who is a very accurate, but extremely slow reader should be given exercises to develop speed of reading rather than phonic drill materials. In the upper

grades this type of reading case is frequently found, but the retardation in the primary grades is rarely the result of very accurate but slow reading. Reading cases at the low level are usually very inaccurate readers and therefore require the drills for the development of accurate perception and responses.¹

An Evaluation of the Different Methods

A relative evaluation of the Fernald, Monroe, Gates, and Hegge-Kirk remedial methods is probably impossible. Each author claims startling results with his method. Each author furthermore believes that other methods have been tried and that his method seems the most adequate.

It should be noted however that every method teaches the child the details of reading. It corresponds to the second stage of the reading process described in Chapter IV. Monroe and Hegge-Kirk emphasize teaching the child details in words by the use of a phonic approach to reading. Gates uses visualization of the whole words and parts of words to aid the child in discriminating details. Fernald uses the tracing method which apparently gives a kinaesthetic cue to the details of the word and consequently a visual cue to word-recognition and discrimination. It is probable that all authors have psychologically the same approach to the teaching of reading, although they emphasize different methods of presentation.

GENERAL SUGGESTIONS FOR REMEDIAL INSTRUCTION

General suggestions are given for carrying out a remedial program with an individual child, since no remedial program can succeed unless these principles are carried out.

1. The remedial method should enable the child to be suc-

¹ SAMUEL A. KIRK, *op. cit.*, pp. 9-10.

cessful from the outset of instruction. Children who have continually failed in reading can best become motivated if they are presented materials with which they can succeed. *Success is probably the most important motivating factor for such children.*

2. Remedial instruction is most effective when given individually. A good program is to give the child individual instruction until some of his difficulties are removed and then transfer him to a group. If a child receives a good start, group instruction will then become effective. If small groups of children are trained the teacher should group the children according to similarities in levels of reading and in difficulties, and so far as possible, in interests and ages.

3. Remedial instruction should be systematic. Hit-or-miss methods rarely succeed. An effective procedure is to try one method systematically and if that does not succeed, try some other method systematically. Furthermore, different approaches for different purposes should not be used simultaneously. For example, if accuracy of reading is being stressed, exercises in speed of reading should not be introduced. If exercises for speed of silent reading are being given, oral reading and word-book materials for word-recognition difficulties should not be given.

4. The teacher should be flexible in her approach to reading. She may have to resort to certain "crutches" in reading. For example certain mechanical aids, such as using the finger, are harmful in teaching young children to read, yet they are sometimes essential in the initial stages for some children with reading disabilities.

5. Materials should be presented in such a way that the child can realize he is progressing. Knowledge of results of instruction aid motivation and facilitate learning. A graph of progress is a good aid in showing the child success in reading. A child will see how rapidly he is progressing if the teacher

graphs his errors in reading, speed of reading, number of new words learned, and so forth. This procedure introduces competition with the child's own previous record.

6. Remedial instruction in the lower grades usually stresses oral rather than silent reading. The oral response aids learning and also gives the teacher an opportunity to correct erroneous responses. After the child has become an accurate reader silent reading may be introduced.

7. The remedial period should be given at a time and place enjoyable to the child. Retaining a child after school hours against his will may violate the purpose of remedial reading.

8. The remedial periods should not be so long that they instigate fatigue, nor should they be too short. The time of the remedial period depends upon the interest and ability of the child. Furthermore, one or two periods of remedial instruction a week is probably insufficient. The child should be given a minimum of three periods of remedial instruction each week at regularly distributed intervals.

9. The teacher of remedial reading should be tolerant, sympathetic, optimistic, and encouraging to the child at all times. She should have good insight into the reading difficulties of children.

10. The materials used in remedial reading should be interesting to the child, and should be simple enough to insure success, yet sufficiently difficult to stimulate the child to put forth effort to learn. Reading materials far below the child's reading ability are not effective as a remedial method.

SOME RESULTS OF REMEDIAL INSTRUCTION WITH MENTALLY RETARDED CHILDREN

Aside from the reports of Hegge and Kirk, little work has been done with remedial reading for mentally retarded chil-

dren. Monroe and Backus¹ have included in their remedial program in Washington, D.C., a group of twenty-eight dull-normal children from a vocational school. These children were trained in five groups for fourteen weeks. The lesson periods were for thirty minutes and were given at the rate of three times a week. This amounted to eighteen hours work for each group, or thirty-six remedial periods. The average results are given in Table 14.

TABLE 14. GAIN IN READING ACHIEVEMENT AFTER REMEDIAL TRAINING

(Monroe and Backus)

No. of Pupils	Average CA	Average MA	Average IQ	Year's Gain in Reading Achievement on Tests Given Before and After Training
28	15-3	11-10	81	0.5

Monroe thus shows an average gain of one-half year following remedial training.

Hegge² reports the results of extensive training of thirteen mentally deficient children. These children were trained by the Hegge-Kirk Remedial Reading Method. Table 15 gives the status before training, the average reading grade after training, the progress in grades, the number of years of special training, and the number of individual lessons.

Hegge's data presented in Table 15 shows that in an average of one year and ten months of special training mentally retarded children with an average IQ of 71, progressed on an average of 2.6 years in reading. The range was from .9 years to 4.7 years.

¹ *Op. cit.*, p. 142.

² THORLEIF G. HEGGE, "Special Reading Disability with Particular Reference to the Mentally Deficient," *American Association on Mental Deficiency* (May, 1934), p. 324.

TABLE 15. RESULTS OF REMEDIAL TRAINING (Hegge)

CA	Status at Beginning of Special Training		Status at End of Special Training			No. of 30 min. Individual Lessons
	Stanford Binet IQ	Average Reading Grade	Average Reading Grade	Progress in Grades	No. of Yrs. & Mos. in Special Training	
Jl 13-9.....	59	2.0	5.3	3.3	2-4	330
Ta 14-0.....	60	1.2	4.1	2.9	2-8	319
Wb 15-6.....	64	2.0	3.7	1.7	1-3	198
Rd 13-1.....	66	1.1	3.4	2.3	1-10	256
Gf 13-2.....	68	1.4	4.4	3.0	1-9	279
Ha 15-11.....	69	2.2	3.1	.9	1-3	215
Jsz 14-6.....	72	1.3	4.0	2.7	1-3	218
Lm 11-1.....	73	1.4	4.2	2.8	2-5	380
Lw 12-11.....	73	1.6	4.7	3.1	2-2	266
Da 14-6.....	74	2.3	4.8	2.5	2-3	304
Sl 12-6.....	76	1.6	3.1	1.5	1-2	141
Jg 10-10.....	77	1.2	3.5	2.3	1-8	254
Cp 11-7.....	83	1.5	6.2	4.7	2-8	401
Rs 13-1.....	84	2.1	4.4	2.3	0-8	116
Ave. 13-4.....	71	1.6	4.2	2.6	1-10	263

Kirk¹ gave individual and group training to ten mentally retarded children over a period of five months and studied their rate of progress during training and after five months in school following the cessation of training. Table 16 gives the characteristics of the children and the results in detail.

Kirk concluded:

Ten mentally deficient reading cases were committed to an institution for high grade mentally defective problem children largely because of maladjustment and extreme educational retardation. They were given remedial training in reading to de-

¹ SAMUEL A. KIRK, "The Effects of Remedial Reading on the Educational Progress and Personality Adjustment of High Grade Mentally Deficient Problem Children," *Journal of Juvenile Research* (July, 1934), pp. 140-162.

TABLE 16. PROGRESS OF MENTALLY RETARDED CHILDREN
DURING AND AFTER TRAINING
(Kirk)

Name	C. A.	Stanford-Binet IQ	Initial Reading Grade	Stanford Achievement School Grade	No. of Standard Lessons	No. of Months of Training	Progress		
							In Reading Grades	In Total Stanford Achievement Grades	After 5 Months in School Without Special Training
Hm.....	15-3	65	1.6	2.8	31	3	1.2	.7	.3
Ht.....	14-2	65	1.8	2.8	24	3	1.1	.6	.3
Ck.....	17-0	71	3.2	3.3	133	8	1.0	**	.8
Ha.....	14-7	71	2.4	*	44	3	1.5	.0	.7+
Ew.....	13-9	73	2.8	3.2	27	3	1.0	.2	.5
Eb.....	15-1	75	2.3	3.4	77	7	1.4	**	.7
Wh.....	11-10	75	1.8	*	41	3	.5	.5	.1+
Vk.....	12-5	84	2.4	3.4	25	3	1.0	.8	.2
Lmt.....	11-4	87	1.8	2.8	124	9	2.0	.3	.8
Cj.....	12-0	87	2.8	2.8	152	11	1.6	.9	1.6
Ave.....	13-9	75	2.3		68	5.3	1.2	.5	.6***
									.4

* Below norms on Primary Form of Stanford Achievement Test.

** Out of School, not tested.

*** The figure .6 is actually too conservative. Cases Ha and Wh did not score on the first Stanford Achievement Test. (.7+ and .1+ indicate that they had made at least .7 and .1 grades respectively.)

determine the effects of such training on school achievement and personality adjustment. It was found that:

1. The group (C.A. 12-9, IQ 75) progressed 1.2 grades in reading in an average of five months of training and with an average of 68 standard one-half hour lessons. Their rate of progress under treatment was over five times the rate of 100 unselected children in the institution school.

2. On the Stanford Achievement test the group progressed while under treatment in reading at over twice the rate of other institution children.

3. Tests after a period of five months in school following treatment indicated that the group continued to progress. In reading their rate of progress was over twice the rate of institution children. On the Stanford Achievement test the progress was also approximately twice the rate of the 100 school children.

4. Adjustment to the classroom situation following educational advancement was observed by the teachers in every case.

5. General adjustment and changes in personality traits showing a marked diminution of day-dreaming, incorrigibility, inattentiveness, shyness, negativism, etc., were observed in a majority of the cases.

6. The importance of a comprehensive program of remedial reading in schools, special classes, and institutions is discussed.¹

It appears then that remedial training with mentally retarded children produces significant and satisfying results. The results of Hegge and Kirk show that mentally retarded children can profit sufficiently from remedial instruction, and that after a beginning has been made the children may be left to their own resources to continue the progress under classroom conditions.

SUMMARY

1. Reading disabilities, that is, children who fail to read up to their capacities, are found as frequently among the mentally retarded as among mentally normal children.

2. The diagnosis of a reading case involves the determination of mental ability, reading achievement, other school achievements, causes, and symptoms of poor reading.

3. Among the various methods proposed are found (a) the Fernald Kinaesthetic Method, (b) the Monroe Phonic-Tracing Method, (c) the Gates Method of Visual Analysis, and (d) the Hegge-Kirk Phonic Method. All these methods attempt to

¹ SAMUEL A. KIRK, *op. cit.*, p. 162.

train the child to learn details in reading as described in Chapter IV.

4. Results of remedial instruction by Monroe, Hegge, and Kirk demonstrate beyond doubt that mentally retarded children profit significantly from remedial instruction.

CHAPTER VII

The Reading Problem of the Dull-Normal Child

THE DULL-NORMAL CHILD

THE DULL-NORMAL and backward child is a difficult problem for the schools. He is not sufficiently retarded to warrant being placed in a special class for mentally retarded children, yet he is not sufficiently bright to maintain the curriculum standards established for the average and superior children. With an IQ between 80 and 90, the dull-normal child is somewhat slower in learning the academic subjects than most of the children in the school. Problems of truancy, delinquency, behavior, and disinterest in school work are more frequent with this group than with average or superior children. Surveys made on populations of correctional institutions or "reform schools" have invariably shown that the majority of children in such institutions are dull-normal and backward, with IQ's ranging from 75 to 90.

Over fifteen per cent of school children are dull-normal and backward. Educationally these children are usually one to three years below children of their age, and they rarely complete the secondary school successfully. Many of the dull-normal children reach eighth-grade achievement by the time they are sixteen years old, and some of them enter high school only to remain laggards or failures in the academic subjects.

Failures in the academic high school of today are largely among the group of dull-normal children whose capacity for academic achievement is far below that of the average high-school student. Yet, because of unemployment and the fact that few sixteen-year-old children find positions, an increasing number of dull-normals are entering the academic high school.

In some communities pre-vocational or technical high schools are organized to educate the dull-normal child in a reduced academic curriculum but with emphasis on socialization, vocational training, and other non-academic activities. Only a minimum of courses such as Latin, French, algebra, geometry, and the like are included. The purpose of such a curriculum is to prepare the dull-normal child for the problems of life and earning a living, rather than for college. These junior and senior high schools, however, are still few in number and the majority of backward children are pushed into the regular academic junior and senior high schools that are not organized to meet their needs.

Although the education of the dull-normal child has long been a problem little has been done to adapt the curriculum to his needs and abilities. Many object to the practice of sending these children to special pre-vocational and vocational schools, thereby segregating them from others. Secondary schools, which are too academic for the dull-normal child, continue to prepare their students for college although only a small proportion attend institutions of higher learning. The problem will remain until the secondary school adopts a flexible curriculum to meet the needs and abilities of the dull-normal child as well as the superior child.

A curriculum for the education of the dull-normal child in the junior and senior high school should include courses which deal with the practical problems of living and earning a living. To place a dull-normal child in a school with a curriculum de-

signed for the small group who plan to go to college is like throwing a non-swimmer into the ocean. How much algebra, French, German, geometry, or technical history does the average American adult use in his daily life? The answer is, probably very little. Yet the dull-normal child is being compelled to learn abstract subjects which he will not learn adequately, and which he will not use. Reading, however, is utilized by everyone who can read, and the more efficient the reader the more independent he can become. Through reading he may obtain vicarious experiences and may learn further about the problem of living and earning a living. Much of the school work is dependent upon reading ability. Progress and achievement in subjects such as English, the social studies, and science can be made only through adequate reading ability. For these reasons reading is one of the subjects that should be emphasized in both the elementary and the secondary schools.

THE READING PROBLEM

The reading problem of the dull-normal child in the elementary and secondary school is strikingly presented in the recent results of an extensive study by Center and Persons.¹ Through the aid of funds from the Civic Works Administration, Center and Persons tested the intelligence and reading achievement of over seven thousand students at the Theodore Roosevelt High School, a large co-educational, cosmopolitan high school in New York City, and gave remedial instruction in reading to about four hundred of the boys and girls.

Center and Persons report that sixty-four per cent of the

¹ STELLA S. CENTER and GLADYS L. PERSONS, *Teaching High-School Students to Read*, pp. 3-14.

first-term entrants into the high school were deficient in reading. A considerable number of pupils read on the fourth, fifth, sixth, and seventh-grade elementary school levels. According to the Terman Group Test of Mental Ability approximately twenty-four per cent of the seven thousand students had IQ's of 89 and below.

Of the four hundred and four pupils in the high school selected by Center and Persons for remedial instruction, two hundred fifty-six had IQ's below 90, and one hundred forty-eight had IQ's of 90 and above. These statistics show definitely that the reading problem in the high school is largely a problem of the dull-normal child, for the majority of children selected for reading instruction were dull-normal children. In spite of their lower abilities, these children are capable of reading at a higher level than they ordinarily do. This is demonstrated by the authors from the results of remedial instruction.

TABLE 17. GAINS IN READING AFTER REMEDIAL INSTRUCTION
(Center and Persons¹)

	No. of Terms of Instruction	No. of Cases	Median IQ	Initial Reading Grade	Final Reading Grade	Gain in Grades
Group I.....	4	69	86	6.7	8.5	+1.8
Group II A....	3	51	89	7.1	8.9	+1.8
Group III A....	3	58	85	6.7	8.1	+1.4
Group IV.....	2	53	89	6.9	8.4	+1.5
Group V.....	1	96	89	7.5	8.4	+ .9

Table 17 shows the results of remedial instruction for different groups which received from one to four terms (semesters) of remedial instruction. The table shows that the median IQ

¹ *Op. cit.*, p. 67. By permission of D. Appleton-Century Company, publishers.

of each group was in the 80's. The median reading grade on the Stanford Achievement Test was in the sixth or seventh grade. The median reading grade after remedial instruction had been given was in the eighth grade for every group. The median gains for the various groups ranged from .9 to 1.8 grades. The authors also presented evidence to show that there were fewer failures in school subjects among the group after gains in reading had been made.

The study by Center and Persons shows that (1) the reading problem in the high school is largely a problem of the dull-normal and retarded child, (2) instruction in reading for this low ability group tends to raise their reading grades significantly, and (3) increased efficiency in reading tends to lower the number of failures in school subjects. This leads to the conclusion that the dull-normal child is not being trained in reading as well as he should be, and that the schools are failing to provide adequate instruction in reading. *The schools are failing to provide an educational system which will encourage the dull-normal child to learn to read so that he will read to learn.*

A READING PROGRAM FOR THE DULL-NORMAL CHILD

Two problems confront the supervisor of reading in a school system. One is to prevent children from going through an elementary school without developing adequate reading ability. The other problem is to teach reading to those children who have been promoted and who have even entered the secondary school without learning to read adequately.

The first problem requires a reorientation of the curriculum of the elementary school to prevent children from remaining retarded throughout their school career. This happens frequently with the dull-normal child. For example, Edward entered kindergarten at the age of five. At the age of six he

entered the first grade. Since his IQ was 85, he had a mental age of a little over five years. In the period of the first grade he did not learn to read adequately, but was sent nevertheless to the second grade the following year and was promoted each year thereafter. When he was in the fifth grade, at the age of ten, his mental age was eight and one-half years. His reading ability was at the high third-grade level but he was required to read books of fifth-grade difficulty. It took most of his time to read assignments given to the class, and consequently he had very little time for leisure reading. His information about reading materials lagged behind most of the other children in the class. At the age of fourteen he was asked to repeat the eighth grade before he went into high school. After much discouragement and disappointment he patiently awaited the time when he would be sixteen years old so that he could leave school.

In some school systems the dull-normal child is forced to repeat grades during his school career. In following a practice of non-promotion for some children a number of policies have been established. One policy is to require the child to repeat the kindergarten before admitting him into the first grade. Subsequent repetitions of grades are forced at later stages. Other schools require the child to repeat the third grade before he proceeds to the fourth. And still other schools promote children and then fail them in the eighth grade or during the first years of high school.

To avoid failure in reading on the part of the dull-normal child and to increase his efficiency at the upper levels, schools should (1) give him an adequate beginning in reading during the primary years, and (2) increase the efficiency of his reading through appropriate instruction.

A Reading Program for the Primary Grades

In a large school system, organize several types of first grades, (1) one for the average or superior child, who is capable of learning to read through the third-grade level within three years, and (2) one for the twenty per cent of dull-normal children who can complete the first three grades in reading in four years time. This would not be a special class but another organization for the child who is a slow-learner. For this class the following program is suggested:

First Year. An intensive reading readiness program should be given most of the first year to all children who show a lack of readiness to learn to read. This would include dull-normal children and many average children who would otherwise be retained in the kindergarten for another year. This program would be similar to the plan for pre-reading activities outlined in Chapter III, and possibly would include an initial start in reading as suggested in Chapter IV.

Second Year. During the second year these children should obtain an adequate beginning in reading. They should not only learn to read but should develop a desire to read many simple books at the first- and second-grade level.

Third Year. During the third year the children should increase their ability in word-recognition methods and should read many books at the second- and third-grade levels. These methods are described in Chapter V.

Fourth Year. During the fourth year these children should receive instruction which will aid them in reading fluently third- and possibly fourth-grade books. Because of their success in learning to read they should have developed more wholesome attitudes toward books and toward reading and school in general than if they had attempted to learn to read in three years as do the faster learners.

These children should now be able to enter the fourth grade

without differentiation from other children. For the slowest group, possibly the fourth, fifth, and sixth grades may also be completed in four years. Those who can keep up with average children should be given the opportunity.

For small schools, or school systems that have only one first grade, a similar plan may be followed within the grade. Usually in a class of forty children about ten of them are dull-normal or backward, about twenty are average, and another ten are superior in ability. Because of these differences most teachers have several reading groups within the first grade, progressing at different rates. For the slow-learning group a more intensive and longer pre-reading program should be given. If the slow group has not learned to read sufficiently well during their first year, they may be retained for another year in the first grade. During their second year, however, they may be grouped with the superior children in the first grade, since they are older and have had pre-reading and some beginning reading experience.

During their third and fourth years of school they may be promoted to the second and third grades, and grouped with the average children. In this way failure of promotion comes during the beginning of their school career rather than later. This procedure is possibly preferable to the policy of advancing them during their early years and then failing to promote them later in their school careers when they are apt to be more sensitive to failure.

The plan of covering the same materials as other children in a longer time requires homogeneous grouping within the same group. A plan of this sort should be very flexible. Many children who are placed in the four-year primary group will probably learn to read faster than was expected. These children should be transferred to the faster reading group. Also, many children who were placed in the three-year primary

class may find difficulty in learning to read. They could be transferred to the four-year primary group.

The purpose of prolonging the training period is primarily to give more intensive training to certain children so that they will read as other children, and will not be forced to repeat work or lag far behind their grade group. When they enter the junior high school they will be one or two years older than the other children, but they will have the same reading ability as the group with whom they associate. Furthermore, because of the lack of constant failure during their previous school career they should have more wholesome attitudes toward school, fewer defense mechanisms toward methods of study, and a better adjusted personality.

A Reading Program for the Advanced Grades

A good beginning in reading has been emphasized since many of the difficulties encountered in reading in the upper grades and in high schools are the results of inadequate beginnings. Stress, however, should be given to reading instruction in the upper grades and in the high schools with dull-normal children if they are expected to adjust to the reading needs of daily life.

Poor reading habits are fostered when a child is placed in a grade that requires reading ability several years beyond his own. The materials of reading in such a class are too difficult for the child. This difficulty produces discouragement and dislike for reading. When a child is required to read difficult materials for certain assignments in school, he finds such tasks laborious and tedious. He soon begins to view reading unpleasantly. Furthermore, continual reading of difficult materials fosters the habit of slow reading, word reading, and inaccurate methods of comprehension, word recognition, and study.

Suggestions are given for increasing efficiency in reading for

dull-normal children in the upper elementary grades and in high school.

Study each child and determine his needs in reading. All dull-normal children do not read alike. Each child should be studied individually so that the teacher may determine his needs in reading. Appropriate instruction for each child may be given only after the needs and difficulties of the child have been determined.

Develop in each child a desire for recreational or leisure-time reading. This is usually lacking in a dull-normal child who has had to read books that were difficult for him. Suggestions for developing this ability are presented here:

1. Discuss books, where to find them, and some of the fascinating information which they contain.
2. Abolish the book-report method. Allow the child to read without requiring him to account for what he reads. Book-reports destroy interest in reading.
3. Aid the child in selecting interesting books that are easy for him to read. Stories and classics with a reduced vocabulary are designed especially for this type of child.
4. Motivate reading along the lines of the child's interest through projects or units of work. For older children the activity method has proven concrete and effective.

Develop in the child effective, rapid, and efficient methods of reading. This may be done in the following ways:

1. Study the reading habits of the child and give exercises which will correct poor reading habits.
2. Give the child special exercises in speed and comprehension and aid the child in transferring these habits to leisure-time reading.

Develop in the child the ability to read efficiently in various fields. Some children read efficiently along one line but are inefficient in other fields of reading. The reading course should include guidance in the following:

1. The ability to locate information rapidly, by skimming over irrelevant details and noting the main points of a section.
2. The ability to think about or question critically that which is being read.
3. The ability to remember what has been read and to organize the materials into a condensed logical unit.

Develop in the child the ability to increase his meaningful vocabulary, and to increase gradually his understanding of more difficult materials. This may be encouraged in the following ways:

1. Increase the child's speaking and reading vocabulary through experiences and units of experience. New terms may be discussed and evaluated in class. The concreteness of an activity aids new terms, phrases, and selections in becoming meaningful to a child.
2. Teach the child to look up words in the dictionary, to derive meanings from the context, and to analyze words from root words, suffixes, prefixes, and the like.
3. Encourage the child to ask questions about various selections read.

Develop in the child the ability to appreciate good literature. Although many dull-normal children may begin by reading cheap magazines, the teacher should not suppress such reading at first, but should try to aid the child in appreciating good literature. If this is carefully executed, many children soon substitute better literature for cheap reading materials. Careful selection of good literature within the reading ability of the child aids considerably in elevating his reading tastes. Reading and group discussions of classics serve as an introduction to good literature.

Develop in the child efficient methods of word-recognition. This problem has been discussed in Chapter IV.

Develop in the child efficient methods of study. Children who

do much leisure-time reading sometimes do not learn to study effectively. Such children should be guided in organizing materials, in noting essential details, and in reproducing the ideas which they have read. This should be done, however, in connection with study reading and not with leisure-time reading.

Develop in the child the ability to read orally with understanding. Although oral reading in the upper elementary grades should not be emphasized, children should be able to read orally and to express to an audience the feeling of the passage being read.

Develop in the child efficient habits of reading by giving remedial instruction when necessary. Children in the upper elementary grades and in high school who have not been taught to read adequately should be given remedial instruction. The most common difficulties which may be determined by tests and by observation are: (1) low rate of reading but high in comprehension, (2) low in comprehension but high in rate of reading, and (3) low in all phases of reading. The remedial measures for each of these difficulties may be found in many of the books on remedial reading. Suggestions for correcting the various difficulties are given here:

1. *For pupils low in rate of reading but high in comprehension.*
 - a. Stimulate recreational reading.
 - b. Curtail oral reading.
 - c. Give exercises in speed of reading and graph the scores so that the child will see his own progress.
 - d. Give exercises in the use of context clues by omitting non-essential words in passages so that the child will learn to infer certain words from the passage.
 - e. Encourage the child to read simple books within his abilities and interests.
2. *For pupils who are low in comprehension and high in rate*

of reading. These children are usually rapid inaccurate readers.

- a. Stress accuracy in reading by giving exercises for accuracy.
 - b. Stress accuracy through oral reading.
 - c. Increase vocabulary and comprehension by word study and the use of the dictionary.
 - d. Use adequate work-type materials.
 - e. In some cases, use artificial methods of decreasing the eye span. Point to reading material with the finger, cover the lines with a card, or use any other device which will decrease the rate of reading to harmonize with the rate of comprehension.
3. *For pupils who are low in all phases of reading.* These children usually have difficulties in word-recognition which decreases their rate of reading and affects their comprehension.
- a. Give the child an adequate method of word recognition.
 - b. Give oral reading in the beginning stages to enable diagnosis of the difficulty and correction of the errors.
 - c. Utilize work-type materials which will increase word-recognition, speed, and comprehension.

SUMMARY

1. The dull-normal child may be identified by his IQ which is between 80 and 90, and by his slow learning of the academic subjects of the regular schools. He is more advanced than the mentally retarded child and should not be segregated from other children.
2. Studies have shown that about fifteen or twenty per cent of the school population consists of dull-normal children.

3. Many of the failures in the secondary school and many of the poor readers are dull-normal children.

4. A reading program for the dull-normal child should emphasize (1) a good beginning in reading although the first three grades may require four years, and (2) efficient methods of instruction in the upper elementary and secondary schools. Such a program may avoid discouragement, dislike for school, and personality maladjustments.

APPENDIX A

Bibliography

1. ACKERSON, LUTON, "Behavior Traits of Higher Grade Mental Defectives (a Statistical Study)," *American Association on Mental Deficiency*, XL (April, 1935), 435-445.
2. BAKER, HARRY J., *Characteristic Differences in Bright and Dull Pupils*. Bloomington, Illinois: Public School Publishing Company, 1927. 118 pp.
3. BENNETT, A., *A Comparative Study of Subnormal Children in the Elementary Grades*. New York: Bureau of Publications, Teachers College, Columbia University, Contributions to Education, No. 510, 1932. 81 pp.
4. BETTS, EMMETT A., *The Prevention and Correction of Reading Difficulties*. Evanston, Illinois: Row, Petersen and Company, 1936. 402 pp.
5. BINET, A., and TH. SIMON, "Recherches de Pédagogie Scientifique," *L'Année Psychologique* (1905), 233-274.
6. BRAEM, HELEN R., "An Experiment at Letchworth Village," *New York State Education*, XVIII (October, 1930), 162-164.
7. CENTER, STELLA S., and GLADYS L. PERSONS, *Teaching High School Students to Read*. New York: D. Appleton-Century Company, 1937. 167 pp.
8. CHANNING, ALICE, *Employment of Mentally Deficient Boys and Girls*. United States Department of Labor, Children's Bureau Publication No. 210, Washington, D.C.: United States Government Printing Office, 1932. 107 pp.
9. CHIPMAN, CATHERINE E., "The Vocabulary of Mental Defectives," *American Association on Mental Deficiency*, XL (April, 1935), 485-504.
10. DAVIDSON, HELEN P., "An Experimental Study of Bright, Average, and Dull Children at the Four Year Mental Level," *Genetic Psychology Monographs*, II, Nos. 3 and 4 (1931), 119-290.
11. DAYTON, N. A., "Height, Weight, and Intelligence Relationships in 31,939 Retarded Children Examined by Fifteen Massachusetts Travelling School Clinics, 1921-1932," *American Association on Mental Deficiency*, XLII, No. 2 (May, 1937), 84-100.
12. DAYTON, N. A., "Mortality in the Mentally Deficient Over a 14

- Year Period," *Proceedings of the American Association for the Study of the Feeble-minded*, XXXVI (April, 1931), 127-212.
13. DOLCH, EDWARD W., "A Basic Sight Vocabulary," *The Elementary School Journal*, XXXVI (February, 1936), 456-460.
 14. DOLCH, EDWARD W., *The Psychology and Teaching of Reading*. Boston: Ginn and Company, 1931. 261 pp.
 15. DOWLING, HARVEY E., "An Analysis of the Visual Findings in Subnormal Children," *American Association on Mental Deficiency*, LXI (May, 1936), 168-172.
 16. FERNALD, GRACE M., "On Certain Language Disabilities," *Mental Measurement Monographs*, No. 11 (August, 1936), 121 pp.
 17. FERNALD, GRACE M., and H. KELLER, "The Effect of Kinaesthetic Factors in the Development of Word Recognition in the Case of Non-Readers," *Journal of Educational Research*, IV (December, 1921), 355-377.
 18. FOSTER, EMERY M., and ELISE H. MARTENS, *Statistics of Special Schools and Classes for Exceptional Children*. Department of the Interior, Bulletin No. 2, Washington, D.C.: United States Government Printing Office, 1937. 179 pp.
 19. FREEMAN, FRANK N., *Mental Tests*, Revised Edition. Boston: Houghton Mifflin Company, 1939. 460 pp.
 20. FREEMAN, FRANK N., "The Influence of Environment on the Intelligence, School Achievement, and Conduct of Foster Children," *The Twenty-Seventh Yearbook of the National Society for the Study of Education: Nature and Nurture*, Part I. Bloomington, Illinois: Public School Publishing Company (February, 1928), 103-218.
 21. GATES, ARTHUR I., *A Reading Vocabulary for the Primary Grades, Revised*. New York: Teachers College, Columbia University, 1935. 29 pp.
 22. GATES, ARTHUR I., *Interest and Ability in Reading*. New York: The Macmillan Company, 1930. 264 pp.
 23. GATES, ARTHUR I., *New Methods in Primary Reading*. New York: Teachers College, Columbia University, 1928. 236 pp.
 24. GATES, ARTHUR I., *The Improvement of Reading*. New York: The Macmillan Company, 1935. 668 pp.
 25. GLUECK, ELEANOR T., "Mental Retardation and Juvenile Delinquency," *Mental Hygiene*, XIX (October, 1935), 549-572.
 26. GODDARD, H. H., *Feeble-Mindedness: Its Causes and Consequences*. New York: The Macmillan Company, 1916. 599 pp.
 27. GODDARD, H. H., "The Height and Weight of Feeble-Minded Children in American Institutions," *Journal of Nervous and Mental Diseases*, XXXIV, No. 34 (June, 1912), 211-235.

28. GRAY, WILLIAM S., "The Nature and Types of Reading," *The Thirty-Sixth Yearbook of the National Society for the Study of Education*. A Second Report: "The Teaching of Reading." Bloomington, Illinois: Public School Publishing Company, 1937, 23-37.
29. HARRISON, M. LUCILE, *Reading Readiness* (Revised and enlarged edition). Boston: Houghton Mifflin Company, 1939. 255 pp.
30. HEGGE, THORLEIF G., R. SEARS, and S. A. KIRK, "Reading Cases in an Institution for Mentally Retarded Problem Children," *Proceedings of the American Association for the Study of the Feeble-minded*, XXXVII (May, 1932), 149-212.
31. HEGGE, THORLEIF G., SAMUEL A. KIRK, and WINIFRED KIRK, *Remedial Reading Drills*. Ann Arbor: George Wahr, 1936. 58 pp.
32. HEGGE, THORLEIF G., "Special Reading Disability with Particular Reference to the Mentally Deficient," *American Association on Mental Deficiency*, XXXIX (May, 1934), 297-343.
33. HOAKLEY, Z. P., "The Variability of Intelligence Quotients," *Proceedings of the American Association for the Study of the Feeble-minded*, XXXVII (May, 1932), 119-146.
34. HOLLINGWORTH, LETA S., *The Psychology of Subnormal Children*. New York: The Macmillan Company, 1924. 288 pp.
35. INGRAM, CHRISTINE P., *Education of the Slow-Learning Child*. Yonkers-on-Hudson: World Book Company, 1935. 419 pp.
36. KELLY, ELIZABETH, "The Improvement of Reading in Special Classes for Mentally Retarded Children," *American Association on Mental Deficiency*, XXXIX (May, 1934), 67-73.
37. KIRK, SAMUEL A., *Manual of Directions for Use with the Hegge-Kirk Remedial Reading Drills*. Ann Arbor: George Wahr, 1936. 49 pp.
38. KIRK, SAMUEL A., "Reading Aptitudes of Mentally Retarded Children," *American Association on Mental Deficiency*, XLIV, No. 2 (May, 1939).
39. KIRK, SAMUEL A., "The Effects of Remedial Reading on the Educational Progress and Personality Adjustment of High Grade Mentally Deficient Problem Children," *Journal of Juvenile Research*, XVIII (July, 1934), 140-162.
40. KIRK, SAMUEL A., "The Influence of Manual Tracing on the Learning of Simple Words in the Case of Subnormal Boys," *Journal of Educational Psychology*, XXIV (October, 1933), 525-535.
41. KUHLMANN, F., "The Results of Repeated Mental Re-Examination of Six Hundred and Thirty-nine Feeble-minded Over a Period of Ten Years," *Journal of Applied Psychology*, V (September, 1921), 195-224.

42. MACINTYRE, E. MILDRED, "Teaching of Reading to Mentally Defective Children," *American Association on Mental Deficiency*, XLII, No. 2 (May, 1937), 59-67.
43. MARTENS, ELISE H., *A Guide to Curriculum Adjustment for Mentally Retarded Children*. Department of the Interior, Bulletin No. 11, Washington, D.C.: United States Government Printing Office, 1936. 133 pp.
44. MARTENS, ELISE H., *Group Activities for Mentally Retarded Children*. Department of the Interior, Bulletin No. 7, Washington, D.C.: United States Government Printing Office, 1933. 146 pp.
45. MARTZ, EUGENE W., "Mortality Among the Mentally Deficient," *The Training School Bulletin*, XXX (February, 1934), 185-197.
46. McGEOCH, J. A., "Experimental Studies of Memory," *Readings in General Psychology*. Robinson, Edward S., and Florence R. Robinson, editors; Chicago: University of Chicago Press, 1929, 386-387.
47. MCKEE, PAUL, *Reading and Literature in the Elementary School*. Boston: Houghton Mifflin Company, 1934. 592 pp.
48. MERRILL, MAUD A., "On the Relation of Intelligence to Achievement in Case of Mentally Retarded Children," *Comparative Psychology Monographs*, II, No. 10 (September, 1924), 1-100.
49. MERRILL, MAUD A., "The Significance of IQ's on the Revised Stanford-Binet Scales," *Journal of Educational Psychology*, XXIX (December, 1938), 641-651.
50. MINER, JAMES B., *Deficiency and Delinquency*. Baltimore, Md.: Warwick and York, 1918. 355 pp.
51. MONROE, MARION, *Children Who Cannot Read*. Chicago: University of Chicago Press, 1932. 201 pp.
52. MONROE, MARION, *Reading Aptitude Tests Manual of Directions*. Boston: Houghton Mifflin Company, 1935.
53. MONROE, MARION, and BERTIE BACKUS, *Remedial Reading*. Boston: Houghton Mifflin Company, 1937. 171 pp.
54. MOORE, L., "Mental Growth of Low-Grade Feeble-minded," *Training School Bulletin*, XXVI (June, 1929-1930), 85-88.
55. MURPHY, MILES, "The Relation Between Intelligence and Age of Walking in Normal and Feeble-minded Children," *The Psychological Clinic*, XXII (September, 1933), 187-197.
56. PENNELL, MARY E., and ALICE M. CUSACK, *The Teaching of Reading for Better Living*. Boston: Houghton Mifflin Company, 1935. 469 pp.
57. PINTNER, RUDOLPH, *Intelligence Testing, Methods, and Results*, New Edition. New York: Henry Holt and Company, 1931. 555 pp.

58. REITER, FRANK H., *Organization and Administration of Special Classes for the Orthogenic Backward*. Harrisburg, Pennsylvania: Department of Public Instruction, No. 85, June, 1935. 91 pp.
59. SCHEIDEMANN, NORMA V., *The Psychology of Exceptional Children*. Boston: Houghton Mifflin Company, 1931. 520 pp.
60. SCHLITTER, BERTHA, and MARGARET SVENDSON, *An Experiment in Recreation with the Mentally Retarded*. Chicago: Behavior Research Fund, 1932. 75 pp.
61. SKEELS, HAROLD M., "Mental Development of Children in Foster Homes," *Journal of Consulting Psychology*, II, No. 2 (March-April, 1938), 33-43.
62. SKEELS, HAROLD M., et al., "A Study of Environmental Stimulation," *University of Iowa Studies*, Iowa City: University, xv, No. 4 (December, 1938). 191 pp.
63. SKODAK, MARIE, "The Mental Development of Adopted Children Whose True Mothers are Feeble-Minded," *Child Development*, ix, No. 3 (September, 1938), 303-308.
64. STONE, CLARENCE R., *Better Advanced Reading*. St. Louis: Webster Publishing Company, 1937. 292 pp.
65. STONE, CLARENCE R., *Better Primary Reading*. St. Louis: Webster Publishing Company, 1936. 536 pp.
66. STONE, CLARENCE R., "The Current-Experience Method in Beginning Reading," *Elementary School Journal*, xxxvi (October, 1935), 105-109.
67. TERMAN, LEWIS M., *The Measurement of Intelligence*. Boston: Houghton Mifflin Company, 1916. 362 pp.
68. TERMAN, LEWIS M., and BARBARA S. BURKS, "The Gifted Child," *Handbook of Child Psychology*. Second Edition Revised (Editor, Murchinson), Worcester, Mass.: Clark University Press, 1934, 773-801.
69. TERMAN, LEWIS M., and MAUD A. MERRILL, *Measuring Intelligence* (The revised Stanford-Binet Tests). Boston: Houghton Mifflin Company, 1937. 460 pp.
70. THURSTONE, LOUIS L., "Primary Mental Abilities," *Psychometrika Monographs*, No. 1, 1938. 121 pp.
71. *The Twenty-Fourth Yearbook of the National Society for the Study of Education*. Part I, Bloomington, Illinois: Public School Publishing Company, 1925. 410 pp.
72. *Twenty-Third Biennial Report of the State Board of Control of Wisconsin*. Madison, Wisconsin, 1936. 639 pp.
73. VAUGHN, CHARLES L., and LORENA HUBBS, "Teaching Reading Vocabulary to Lower Grade Morons," *American Association on Mental Deficiency*, XLII (May, 1937), 68-76.

74. WALLIN, J. E., *Clinical and Abnormal Psychology*. Boston: Houghton Mifflin Company, 1927. 649 pp.
75. WELLMAN, BETH L., "Guiding Mental Development," *Childhood Education*, xv (November, 1938), 108-112.
76. WEST, ROBERT, LOU KENNEDY, and ANNA CARR, *The Rehabilitation of Speech*. New York: Harper and Brothers, 1937. 475 pp.
77. White House Conference on Child Care and Protection. Section III, Special Education. New York: The Century Company, 1931. 604 pp.
78. WOODROW, H., "Practice and Transference in Normal and Feeble-Minded Children," *Journal of Educational Psychology*, viii (February and March, 1917), 85-96 and 151-165.

APPENDIX B

Bibliography of Children's Books¹

SUITABLE FOR SLOW-LEARNING CHILDREN

BOOKS AT THE PRE-PRIMER LEVEL

1. *Before We Read*, by GRAY and MONROE (Scott, Foresman and Company).

A reading readiness booklet designed to develop specific functions necessary for reading. It includes language development, ability to see likenesses and differences, the habit of right direction, and other similar skills.

2. *Beginning Days*, by GATES and MINOR (The Macmillan Company).

An optional reading readiness booklet for the purpose of developing reading readiness through pictures. It is a part of *The New Work-Play Books* and should precede the basal pre-primer.

3. *Bob and Jane*, by MERTON and McCALL (Laidlaw Brothers).

A combination text and workbook intended for use with pupils requiring reading readiness training and much repetition. For use with the Merton-McCall Readers.

4. *Busy Brownies*, by JOHNSON (American Education Press).

A diagnostic and remedial workbook at the pre-primer level. May be used in a reading readiness program.

5. *Christmas Time*, by SCHENK (Lyons and Carnahan).

A book that may be used in the Christmas holidays. It contains pre-primer vocabulary.

¹ The author is indebted to Lilian Mattews and Irene Borkowski, special class teachers, for aid in the compilation of this list of reading books.

6. *Elson Pre-Primer*, by ELSON and GRAY (Scott, Foresman and Company).

For use with the *Elson Basic Readers*. Contains pictures and simple vocabulary. Should be followed by *More Dick and Jane Stories*.

7. *Everyday Doings*, by HAHN (Houghton Mifflin Company).

A picture pre-primer designed to give the children a common background and language experiences as a basis for reading. Used with *Child Development Series*.

8. *Everyday Life*, by GEHRES (John C. Winston Company).

A book with many photographic illustrations. Its contents deal with everyday experiences of childhood.

9. *Friends at Play*, by LEAVELL *et al.* (American Book Company).

A pre-primer with many repetitions. It provides a practical reading readiness program followed by a simple approach to the mastery of the fundamentals of reading. Belongs to *The Friendly Hour Readers*.

10. *Frolic and Do-Funny*, by PENNELL and CUSACK (Ginn and Company).

A pre-primer which may be used with a unit on pets. Belongs to the *Children's Own Reader Series*.

11. *Let's Play*, by BUCKINGHAM and DOLCH (Ginn and Company).

This pre-primer contains 46 pages of pictures about the activities of young children. It also contains simple pre-primer vocabulary. For use with *Children's Bookshelf Series*.

12. *More Dick and Jane Stories*, by ELSON and GRAY (Scott, Foresman and Company).

A second pre-primer to supplement the *Elson Pre-Primer*. The repetition of the same vocabulary in a different setting makes it a suitable supplementary pre-primer for slow-learning children.

13. *Mother Goose*, by JOHNSON (American Education Press).

A workbook designed to develop fourteen mechanical, visual, and auditory skills necessary for the teacher to provoke discussion about the illustrations, and thereby stimulate language development and speech training.

14. *Nippy*, by STEVENS (Webster Publishing Company).

A general pre-primer. It contains only 53 words repeated at least 10 times. All of the sentences are limited to one line.

15. *Playmates*, by BAKER (The Bobbs-Merrill Company).

A book of illustrations with basic pre-primer vocabulary. Used with *The Curriculum Readers*.

16. *Off We Go*, by GATES, HUBER, and PEARDON (The Macmillan Company).

This is the basal pre-primer for *The New Work-Play Books*. It contains many illustrations and some basic pre-primer vocabulary. For slow learners a supplementary pre-primer, *Now We Go Again*, should be used. It contains the same vocabulary as the basal pre-primer in a new setting.

17. *Rides and Slides*, by O'DONNELL and CAREY (Row, Peterson and Company).

The first pre-primer of *The Alice and Jerry Books*. The contents of this book are based on the play experiences of young children. It contains numerous illustrations and a vocabulary of 67 words.

18. *Tom's Trip*, by SMITH (Silver, Burdett and Company).

This book deals with the travel experiences of a little boy. It precedes *The Unit Activity Readers*.

19. *We See*, by SHEDD (L. W. Singer Company).

The purpose of this pre-primer is to teach scientific concepts through beautiful pictures. It deals with animals, day and night, weather, seasons, and plants. Only 41 words are used in this book.

20. *Who Knows*, by HAHN (Houghton Mifflin Company).

A little primer which makes a gradual transition from *Everyday Doings* to the primer, *Everyday Fun*. Used with the *Child Development Series*.

BOOKS AT THE PRIMER LEVEL

21. *Ben and Alice*, by LEAVELL *et al.* (American Book Company).

Provides a gradually developing vocabulary consisting of words permanently valuable and immediately useful for classroom activities. Belongs to *The Friendly Hour Readers*.

22. *Bob and Jane*, by MERTON and McCALL (Laidlaw Brothers).

Presents many attractive and simple illustrations for the purpose of arousing in the child the desire to learn about the pets and toys in the illustrations. The vocabulary is presented slowly.

23. *Day In and Day Out*, by O'DONNELL and CAREY (Row, Peterson and Company).

The primer of *The Alice and Jerry Books*. A well-illustrated primer including the words of the pre-primer and adding new ones.

24. *Elson Basic Readers* (Primer), by ELSON and GRAY (Scott, Foresman and Company).

This book presents a variety of stories with plot structures. The vocabulary is controlled.

25. *Reading for Fun*, by HAHN (Houghton Mifflin Company).

The primer in the *Child Development Series*.

26. *Everyday Life*, by GEHRES (John C. Winston Company).

This book contains stories on pets, farms, shoes, and health. It is photographically illustrated. The vocabulary is controlled.

27. *Jim and Judy*, by GATES, HUBER, and PEARDON (The Macmillan Company).

A basal primer for *The New Work-Play Books*. It is well illustrated and the vocabulary is carefully controlled. A feature of this primer is the supplementary pamphlets for each of the units of the book. These are *The Surprise Box*, *In Came Pinky*,

The Painted Calf, and *Bruce and Barbara*. These unit readers repeat the vocabulary of the primer in a different setting.

28. *Names and Games*, by PROUT and BAUMEISTER (University Publishing Company, Chicago).

This book attempts to develop a desire in the child to want to read through presenting the mechanics of reading in a simple and effective manner.

29. *Our Animal Books: Fuzzy Tail*, by SONDERGAARD (D. C. Heath and Company).

The story of a kitten from which children may learn how to feed, handle, and play properly with a pet.

30. *Sally and Billy*, by HARDY (Wheeler Publishing Company).

The story takes the children through one day of interesting experiences. Belongs to *The Child's Own Way Series*.

31. *The New Wag and Puff*, by HARDY (Wheeler Publishing Company).

A story of a dog, a cat, a boy, and a girl and their experiences together. Contains 174 new words and the 85 words used in the pre-primer. Belongs to *The Child's Own Way Series*.

32. *The Road to Health*, by BUNDESEN and MANRY (Laidlaw Brothers).

This book aids in the development of correct health habits for children. It has the vocabulary of a primer.

BOOKS AT THE FIRST-GRADE LEVEL

33. *Down Our Street*, by GATES, HUBER, and PEARDON (The Macmillan Company).

A well-illustrated first reader with a controlled vocabulary. Supplementary unit readers covering the six units of the basal reader are provided. These pamphlets, *The Animal Parade*, *Tip, Mr. Joey and the Pig, Sing*, *Canary Sing*, *Polly the Kid*, *Elsie Elephant*, repeat the vocabulary of the first reader in a new context. These books belong to *The New Work-Play Books*.

34. *Easy New Stories*, by STONE, STONE, and VANDERGAW (Webster Publishing Company).

This book has been recommended for the slow-reading group because of its emphasis on word attack and its plan of phonic instruction. Belongs to *Webster Readers*.

35. *Elson Basic Readers* (Book I), by ELSON and GRAY (Scott, Foresman and Company).

This first reader includes child experiences, old tales, and a holiday story. It has a highly controlled vocabulary, interest, and humor.

36. *Everyday Life*, by GEHRES (John C. Winston Company).

This book has a social content including stories about pets, a farm, shoes, and health. It includes many illustrations.

37. *Finding Friends*, by HAHN (Houghton Mifflin Company).

The revised (1939) edition of the first reader in the *Child Development Series*. The photographic pictures that precede each unit help the retarded child to develop the concepts that he needs to make meaning for the text that follows.

38. *Modern Wonder Books* (American Education Press).

A series of ten-cent pamphlets entitled, *How We Travel*, *Policemen*, *Firemen*, *Keeping Our City Safe*, *The Dairy*, *Farm Animals*, *Pets*, *The Circus*, *Our Houses*, *The Library*, *How Animals Travel*, *Story of Seeds*, *The Zoo*, *Animal Families*, and *Birds and Their Babies*. These pamphlets, consisting of first-grade vocabulary, are useful with units of study on the various topics and are short enough to be read in a limited time.

39. *Nip the Bear*, by JOHNSON (American Education Press).

A diagnostic reading workbook designed to develop comprehension, vocabulary building, word mastery, and the ability to follow directions.

40. *Pets and Toys*, by PROUT and BAUMEISTER (University Publishing Company, Chicago).

This book is based on child interests and experiences. It includes illustrations, games, and exercises for the purpose of developing word recognition. A variety of activities are given such as matching words and pictures, drawing, supplying missing words, and riddles.

41. *Roberts School*, by YOWELL (Wheeler Publishing Company).

A book with a second-grade format but with a first-grade vocabulary. Designed especially for poor readers who have finished a first-grade book but who require more repetition of the first-grade vocabulary, and who wish to read books that appear more advanced. It is a story of a little boy's experience in a modern school.

42. *Round About*, by O'DONNELL and CAREY (Row, Peter-
son and Company).

This book is the primer of *The Alice and Jerry Books*. It is well illustrated and probably more difficult than the average primer. Its contents include the experiences of children.

43. *Shop Story Reader*, by KENNEDY and NUTTEN (Dis-
tributed by the authors, Detroit Public Schools).

This book is designed especially for retarded children. Its vocabulary is that of the shop. Besides stories about the pick, the axe, and so forth, the book includes word study and other exercises for the development of the shop vocabulary.

44. *The Road to Health*, by BUNDESEN and MANRY (Laid-
law Brothers).

This book is a continuation of Book I. The contents are of an informative nature about health and health habits. It includes simple and entertaining stories.

45. *The Laidlaw Readers* (Book I), by DRESSEL and
ROBBINS (Laidlaw Brothers).

A first reader with interesting and informative materials. Many work-type exercises are presented and requested.

BOOKS AT THE SECOND-GRADE LEVEL

46. *Bobbie and Jock and the Mailman*, by FINGER (Henry Holt and Company).

An appealing story by a popular author. Typically American and warmly human in its presentation of life on a small farm. A Junior Literary Guild selection.

47. *Buttons*, by ROBINSON (The Viking Press).

A story of a cat born and raised in an alley, and its adventures therein. It was rescued and reformed by a little girl and her father. It is well illustrated with cat pictures. A Junior Literary Guild selection.

48. *Elson Basic Readers* (Book II), by ELSON and GRAY (Scott, Foresman and Company).

This reader contains many interesting factual stories and poems. It also contains old tales and holiday stories.

49. *Four and Twenty Famous Tales*, by NELSON (Hall and McCreary Company).

A book of short selected fables with graded comprehension tests for silent reading.

50. *Health Stories* (Book II), by TOWSE and GRAY (Scott, Foresman and Company).

Simple and essential health principles developed through stories.

51. *Here Comes the Postman*, by PARK (Houghton Mifflin Company).

This book includes excellent and accurate information on the post-office. It may be used with units on a post-office. Belongs to the *Community Life Series*.

52. *Indians in Winter Camp*, by DEMING (Laidlaw Brothers).

This is an unlabeled second-grade reader belonging to the *Indian Life Series*. It contains the basic vocabulary.

53. *Indoors and Outdoors*, by LEAVELL *et al.* (American Book Company).

This book presents stories based on the child's interests and experiences. The stories are grouped in large units which may well serve as the course for reaching classroom activities and much incidental and supplementary reading. Belongs to *The Friendly Hour Readers*.

54. *Jimmy, the Groceryman*, by MILLER (Houghton Mifflin Company).

A story of a little boy's day in his grandfather's store. Provides information about a grocery store. May be used in connection with a unit on stores. Belongs to the *Community Life Series*.

55. *Making Visits*, by HARRIS (Houghton Mifflin Company).

The revised (1939) second reader in the *Child Development Series*. Gravure pictures have been inserted before each unit to help the pupil to build a background of concepts before reading.

56. *Modern Wonder Books* (American Education Press).

A series of ten-cent pamphlets including books entitled, *Your Shoes and Your Feet*, *Story of Milk*, *Plants that Give Us Food*, *The Post Office*, *Animals and Their Babies*, and *Simple Machines*. The vocabulary is graded at the second-year level.

57. *Pets are Fun*, by PARK (Houghton Mifflin Company).

This book relates stories about pets which give accurate information about their habits and care. Lively pictures illustrate the text. Belongs to the *Community Life Series*.

58. *Red Deer, the Indian Boy*, by JOHNSON (American Education Press).

A diagnostic workbook designed to develop comprehension, vocabulary building, word mastery, finding the main idea in a section, and other skills.

59. *Susan's Neighbors at Work*, by HANNA, ANDERSON, and GRAY (Scott, Foresman and Company).

This book contains graphic colored illustrations and stories of community workers. It includes stories about the fireman, policeman, and so forth, as well as facts about recreation and travel facilities in a city.

60. *Skags, the Milk Horse*, by HUBER (American Book Company).

An interesting story which presents information about the preparation and delivery of milk from the dairy.

61. *The Little Boy and His House*, by BONE and ADSHEAD (John C. Winston Company).

An interesting and unusual story of a boy who decided to build a house. Before doing so, he and his uncle visited a Spaniard's cave, a Gypsy tent, a Chinese boat, and other types of homes. A Junior Literary Guild selection.

62. *The Timbertoes*, by ALDREDGE and MCKEE (Harter Publishing Company).

A supplementary reader containing stories about little wooden folk and their two boys. It is carefully graded for the development of vocabulary.

63. *To Market We Go*, by MILLER (Houghton Mifflin Company).

An illustrated book providing interesting and valuable information on the fruit and vegetable market. This book supplements *Jimmy, the Groceryman*. Belongs to the *Community Life Series*.

64. *Traffic*, by LOWNDES and CHRYSIE (Doubleday, Doran and Company).

An illustrated book about automobiles for young readers. A Junior Literary Guild selection.

65. *We Grow Up*, by GATES, HUBER, and PEARDON (The Macmillan Company).

The second reader of *The New Work-Play Books*. Like the first reader and primer, unit readers for each of the six units of the book are provided for children who need more repetition of the vocabulary in a different setting.

BOOKS AT THE THIRD-GRADE LEVEL

66. *Airplanes*, by Co-operating Editors (E. M. Hale and Company, Milwaukee).

An informational pamphlet including illustrations of the construction and activities of the modern transport plane.

67. *Elson Basic Readers* (Book III), by ELSON and GRAY (Scott, Foresman and Company).

This book includes a balance of modern and older materials of poems and stories with many centers of interest.

68. *Everyday Living*, by BROWNELL, IRELAND, and GILES (Rand, McNally and Company).

A unique book which emphasizes the social aspects of health.

69. *Friends Around the World*, by BAKER, BAKER, and REED (Bobbs-Merrill Company).

This reader includes stories on Indian life, world geography, and a background for history. Belongs to *The Curriculum Readers*.

70. *Friends to Know*, by LEAVELL *et al.* (American Book Company).

This book includes many exercises for the development of more efficient habits of reading. The material is informative. It belongs to *The Friendly Hour Readers*.

71. *Health Stories* (Book III), by TOWSE, MATHEWS, and GRAY (Scott, Foresman and Company).

Contains informative material, with a minimum amount of preaching, about health habits.

72. *If I Were Going*, by O'DONNELL and CAREY (Row, Peterson and Company).

The third reader of *The Alice and Jerry Books*. Includes illustrations and stories of other lands.

73. *Jerome Anthony*, by EVANS (G. P. Putnam's Sons).

A story of a boy who left the country to live in the city. The differences between country and city life are vividly portrayed. A Junior Literary Guild selection.

74. *Land of Little Rain*, by FELLOWS (John C. Winston Company).

Contains a story of the everyday happenings of an Indian boy and girl. Indian dances and traditions are made vividly interesting. A Junior Literary Guild selection.

75. *Lazy Liza Lizzard*, by RAINS (John C. Winston Company).

A humorous story full of the flavor of the South. Many colorful and amusing illustrations are included. A Junior Literary Guild selection.

76. *Long Ago*, by WADDELL and PERRY (The Macmillan Company).

Contains stories of the Indians and of the colonists of early days of American history.

77. *Meeting Our Neighbors*, by HAHN and WAHLERT (Houghton Mifflin Company).

The revised (1939) third reader in the *Child Development Series*. Gravure pictures before each unit help pupils to make meaning for the text that follows.

78. *Modern Wonder Books* (American Education Press).

A series of ten-cent pamphlets covering such topics as *Trains*, *Story of Flying*, *Story of Heat*, *Boats*, and the like, written in third-grade vocabulary.

79. *Neighbors Near and Far*, by HAHN and WAHLERT (Houghton Mifflin Company).

The contents of this book are organized in six units describing near and far neighbors. Belongs to the *Child Development Series*.

80. *Red People of the Wooded Country*, by DEMING (Laidlaw Brothers).

The subject matter of this reader is interesting to mentally retarded children. Belongs to the *Indian Life Series*.

81. *Shawneen and the Gander*, by BENNETT (Doubleday, Doran and Company).

The experiences of Shawneen in a little Irish village. The merry tale is enlivened by many pictures. A Junior Literary Guild selection.

82. *The Prose and Poetry Readers*, by SINGER (L. W. Singer Company).

The book contains prose, poetry, and life studies of some poets, as well as colored reproductions of masterpiece paintings. The stories are short and interesting.

83. *The Lazy Kettle*, by PROUT and BAUMEISTER (University Publishing Company).

This third reader, like the other *Prout Readers*, consists of many exercises for the development of efficient reading habits. The materials consist of fact and fancy.

84. *Wide Wings*, by GATES, HUBER, and PEARDON (The Macmillan Company).

A large third reader consisting of 344 pages of illustrations and old and new stories. As in the other *New Work-Play Books*, this reader has seven supplementary unit books for each of the units of the book.

BOOKS AT THE FOURTH-GRADE LEVEL

85. *About Ricco*, by WILSON (A. Whitman and Company).

A story about a small Italian boy giving a vivid picture of Italy today. It is well illustrated. A Junior Literary Guild selection.

86. *Dancing Cloud*, by BUFF and BUFF (The Viking Press).

A story of an Indian boy and girl and their experiences. A Junior Literary Guild selection.

87. *Elson Basic Readers* (Book IV), by ELSON and GRAY (Scott, Foresman and Company).

A fourth-grade reader organized by units including the world, citizens, workers, and so forth.

88. *Exploring New Fields*, by PARKER and HARRIS (Houghton Mifflin Company).

The fourth reader in the *Child Development Series*. Gravure pictures before each unit develop accurate and clear concepts which help pupils to make meaning for the text that follows.

89. *Forty Famous Stories*, by MERTZ (Hall and McCreary Company).

A series of short stories and fables for the purpose of developing more efficient silent reading ability. Questions and exercises for each story are included.

90. *First Days in America*, by MILLER (Harter Publishing Company).

A story of a pony. The contents have been checked for a vocabulary within the limits of third- and fourth-grade reading ability. It is well illustrated and printed in large clear type.

91. *Living Healthfully*, by CHARTERS, SMILEY, and STRANG (The Macmillan Company).

This book develops units on safety, food, prevention of colds and contagion, rest, teeth, and drinking water.

92. *Lorna Doone*, by JORDAN, BERGLUND, and WASHBURN (Scott, Foresman and Company).

An adapted version made simple enough for children reading at the fourth-grade level. The book contains 308 pages of clear type, easily read short sentences, with a vocabulary of fewer than 1900 words.

93. *Mateo and Lolita*, by DURFEE and McMORRIS (Houghton Mifflin Company).

A new (1939) book about Mexican children, for Grades 3-5. Lavishly illustrated from photographs which help pupils to build background for reading.

94. *Modern World Readers*, by LEWIS and ROWLAND (John C. Winston Company).

A study-type reader with materials organized to develop specific skills. It contains a large variety of subjects.

95. *Modern Wonder Books* (American Education Press).

A series of ten-cent pamphlets including topics such as *Beginnings of Trade, Time, Light, Communications, Electricity and Magnets*, etc. The vocabulary is that of the fourth grade.

96. *Six Great Stories*, by MODEROW *et al.* (Scott, Foresman and Company).

This book retells the stories of *Treasure Island*, *The Legend of Sleepy Hollow*, *Rip Van Winkle*, *As You Like It*, *Gareth and Lynette*, and *The Golden Touch*. The stories have been rewritten in fourth- and fifth-grade vocabulary. Suitable reading material for those who cannot read well enough to read the original stories.

97. *The Elephant's Friend*, by BUCKINGHAM (Ginn and Company).

This fourth reader has many centers of interest for children. Belongs to the *Children's Bookshelf*.

98. *The Ship Book*, by DUKELOW and WEBSTER (Houghton Mifflin Company).

Describes the various kinds of ships, both old and new, and

gives specific helps to children who wish to construct and sail miniature ships.

99. *Trails of Adventure* (Book IV), by LEAVELL *et al.* (American Book Company).

A fourth-grade reader designed to develop specific skills in reading. Belongs to *The Friendly Hour Readers*.

100. *When Washington Danced*, by STRATTON (Scott, Foresman and Company).

This book of 335 pages is adapted to the vocabulary needs of fourth- and fifth-grade readers. It is a story of colonial life and has a vocabulary of fewer than 1900 words. The large type, simple vocabulary, and short sentences make it a suitable book for older mentally retarded children.

APPENDIX C

Some Reading Tests Applicable to Mentally Retarded Children

READING READINESS TESTS

1. *Betts Ready to Read Tests.* By EMMETT A. BETTS. Keystone View Company, Meadville, Pa.

These tests attempt to measure visual and auditory readiness for reading. The Keystone Telebinocular is an apparatus for measuring visual sensation and perception. It is used as a screening test to detect visual defects which may affect reading.

2. *The Metropolitan Readiness Tests.* By GERTRUDE H. HILDRETH. World Book Company, Yonkers-on-Hudson, New York.

This is a paper and pencil group test which may be given at the end of the kindergarten or at the beginning of the first grade. It purports to test readiness in numbers as well as in reading and may be used with mentally retarded children.

3. *The Monroe Reading Aptitude Test.* By MARION MONROE. Houghton Mifflin Company, Boston, Mass.

This test measures a number of psychological functions involved in the process of learning to read. Its administration is in two parts; a group test and an individual test. It may be used with mentally retarded children since its norms are adaptable to various intelligence levels and take into consideration the IQ.

4. *The Van Wagenen Reading Readiness Tests.* By M. J. VAN WAGENEN. Educational Test Bureau Inc., Minneapolis, Minn.

This is an individual reading readiness test furnished in two forms. No time limit is given for the responses, which makes it more of a power than a speed test. It may be used with mentally retarded children.

NOTE. Whenever age norms are given in reading readiness tests

the mental age of a child, rather than his chronological age, should be used. For example, percentile scores for various ages are given on the Monroe test. When such norms are being used with retarded children the mental age may be substituted for the chronological age. If the norms read that for a six-year-old child a score of eight on one test is equivalent to a percentile score of 60, a mentally retarded child whose age is 10 and whose mental age is 6 should also receive a percentile score of 60 for a score of 8. In this way reading readiness scores are being compared with children of the same mental ages rather than with children of the same chronological ages.

PRIMARY READING TESTS

1. *Garvey Primary Reading Test.* (For grades 1-3.) By HELEN SUE READ and MAY V. SEAGO. Southern California School Book Depository, Ltd., Los Angeles, Cal.

This test consists of a 16-page booklet. It includes tests of the recognition of forms, vocabulary, and comprehension. The time limit of two or three or more minutes for the separate tests makes it partly a test of speed reading. Since accuracy, rather than speed, is desired with mentally retarded children this test has its limitations. It may be used for the purpose of comparing retarded children with normal children on a test that includes a speed element.

2. *Gates Primary Reading Tests.* (For grades 1 and 2.) By ARTHUR I. GATES. Bureau of Publications, Teachers College, Columbia University, New York.

These tests consist of three types in separate booklets: Type 1, Word Recognition (15 minutes); Type 2, Sentence Reading (15 minutes); Type 3, Paragraph Reading (20 minutes). These tests are applicable to the measurement of reading of mentally retarded children in the primary grades. The advantage of these tests with retarded children is their simplicity of administration and the long time limit given for each type. They are primarily power rather than speed tests.

3. *Progressive Achievement Reading Tests. Primary Battery.* (For grades 1-3.) By E. W. TIEGS and W. W.

CLARK. Southern California School Book Depository, Ltd., Los Angeles, Cal.

This test includes four tests of reading vocabulary and three tests of reading comprehension. One feature which makes it attractive for use with retarded children is the omission of the time limit. Papers are collected when ninety per cent of the class has completed the test. It becomes a power rather than a speed test of reading. Another feature is that it measures reading in the first grade to the advanced grades by the same method. The other batteries of the test, the intermediate and the advanced, measure reading in the higher grade levels.

4. *Primary Reading Test.* (For grade 1.) By ALBERT G. REILLY. Houghton Mifflin Company, Boston, Mass.

This test includes four types of reading; namely, word recognition, word meaning, sentence meaning, and paragraph meaning. The omission of a time limit makes it a suitable test for retarded children. It may be used with children who read at the level of high first and beginning second grade.

5. *Standardized Oral Reading Paragraphs.* (For grades 1-8.) By WILLIAM S. GRAY. Public School Publishing Company, Bloomington, Illinois.

This is an individual test for the measurement of oral reading. Scores and grade norms are obtained on the basis of errors made on the test and the time taken for reading each paragraph. It is also used for diagnostic purposes since observations of the errors which are made by the child are recorded. These errors may be classified according to vowel errors, omissions, and so forth. It is a good test for observing how a mentally retarded child reads and for obtaining a grade score in oral reading.

ELEMENTARY READING TESTS

1. *Gates Silent Reading Tests.* (For grades 3-8.) By ARTHUR I. GATES. Bureau of Publications, Teachers College, Columbia University, New York.

The Gates tests consist of four types: Type A, Reading to Appreciate General Significance (six minutes); Type B, Reading to

Predict the Outcome of Given Events (eight minutes); Type C, Reading to Understand Precise Directions (eight minutes); Type D, Reading to Note Details (eight minutes). The scores on these tests depend largely on the speed and accuracy with which a child reads ungraded paragraphs. It has its limitations with mentally retarded children because of the speed element. It may be used, however, for a comparison of retarded children with normal children on the specific functions measured by this test.

2. *Instructional Reading Tests.* (For grades 4-6.) By M. J. NELSON. Houghton Mifflin Company, Boston, Mass.

The Instructional Reading Tests consist of eight paragraphs to be read, and four questions under each paragraph to be answered. The tests measure (1) the child's ability to appreciate the general significance of the paragraph, (2) his ability to note details, (3) his ability to understand the logical outcomes of events, and (4) his ability to understand certain vocabulary items. The time limit of fifteen minutes makes this test more of a power than a speed test and may be used for survey purposes with retarded children reading at the intermediate grade level.

3. *Nelson Silent Reading Test.* (For grades 3-9.) By M. J. NELSON. Houghton Mifflin Company, Boston, Mass.

The Nelson test consists of a vocabulary test of one hundred words and a paragraph test which measures, (1) the ability to understand the general significance of a paragraph, (2) the ability to note details, and (3) the ability to predict the probable outcome. The time for the vocabulary test is ten minutes, while that for the paragraph test is twenty minutes. The long time allowed for this test makes it more of a power test than a speed test, and therefore applicable to slow-learning children.

4. *Progressive Achievement Reading Tests. Elementary Battery.* (For grades 4-6.) By E. W. TIEGS and W. W. CLARK. Southern California School Book Depository, Ltd., Los Angeles, Cal.

These Reading Tests consist of four tests of vocabulary and three of comprehension. Like the Primary Battery the tests have no time limit and consequently measure power in reading rather than speed. For this reason they are more applicable to mentally retarded children than tests which emphasize the speed factor.

5. (*New*) *Stanford Achievement Reading Test.* (For grades 2-9.) By TRUMAN L. KELLY, GILES M. RUCH, and LEWIS L. TERMAN. World Book Company, Yonkers-on-Hudson, New York.

This consists of two tests of reading, paragraph meaning and word meaning. The paragraph meaning test consists of paragraphs of graded difficulty. The time limit for this test is twenty-five minutes which makes it more of a power than a speed test. The time for the word meaning test is ten minutes. It likewise is graded in difficulty and is therefore a power test. The test is applicable to retarded children in the upper primary or elementary grades.

6. *Thorndike-McCall Reading Scale.* (For grades 2-12.) By E. L. THORNDIKE and WILLIAM A. MCCALL. Bureau of Publications, Teachers College, Columbia University, New York.

The Thorndike-McCall Reading Scale consists of graded paragraphs. After each paragraph there are given a number of questions to be answered. The time limit of thirty minutes makes it a power test. Because of the long time limit and the nature of the test it is applicable to the measurement of reading for mentally retarded children.

DIAGNOSTIC READING EXAMINATIONS

- I. *Durrell Analysis of Reading Difficulty.* By DONALD D. DURRELL. World Book Company, Yonkers-on-Hudson, New York.

This battery of tests is an individual examination consisting of a series of oral and silent reading exercises with standard procedures of checking comprehension, oral recall, and written recall. Other analytical tests are also included. The test is essentially a method of standard observation of errors and of faulty habits in reading. It may be used to diagnose reading difficulties in mentally retarded children.

2. *Diagnostic Reading Examination.* By MARION MONROE. C. H. Stoelting Company, Chicago, Illinois.

The Monroe examination consists of giving a child tests in reading, oral reading, word discrimination, and silent reading. A profile of the relation of reading ability to the mental age and spelling and arithmetic achievement shows whether the child is below his capacities in reading. The Profile of Errors shows wherein the child makes the most frequent errors in reading. Other analytical tests are also included. It may be used to diagnose reading difficulties in mentally retarded children.

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